BELIEF, DOUBT, AND CONFIDENCE: A THRESHOLD ACCOUNT

A Dissertation

Submitted to the Graduate School

of the University of Notre Dame

in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

by

Matthew Brandon Lee

________________________________________

Robert Audi, Co-Director

________________________________________

Michael R. DePaul, Co-Director

Graduate Program in Philosophy

Notre Dame, Indiana

July 2014
This dissertation assesses a thesis concerning the relationship between believing that something is the case and having confidence or sureness that something is the case. The thesis in question is the “Threshold View”: to believe that $p$ (for any proposition $p$) is to have a high degree of confidence that $p$. If we accept the Threshold View and maintain that it is rational to be highly confident that $p$ whenever one’s total evidence very strongly favors $p$ over not-$p$, then we must reject several currently prominent epistemological claims. One is that belief rationally ought to be withheld, even when one’s evidence is very strong, if the cost of being wrong is sufficiently high. Another is that purely statistical evidence can never make belief rational. And a third is that whenever one holds inconsistent beliefs, not all of them can be rational. It has become common to reject the Threshold View to preserve these epistemological claims. This dissertation challenges that way of resolving the conflict.

Part I of the dissertation develops accounts of belief, doubt, and confidence to be used in assessing the Threshold View. The account of belief (Chapter 1) is compatible with most but not all of the main approaches to belief in the existing philosophy of mind.
literature (it is incompatible with realizer functionalism, but compatible with role functionalism, representationalism, dispositionalism, and interpretationism). It is an account on which believing a proposition is a matter of having *enough* of the relevant dispositions, or having a representation that plays enough of the relevant functional role, etc. Belief is therefore vague: there are clear cases of belief, clear cases of non-belief, and borderline cases. A related account of doubt is developed in Chapter 2, and this account is extended in Chapter 3 to yield an account of confidence.

Part II uses the accounts of belief, doubt, and confidence from Part I to assess the Threshold View. All of the major objections to the Threshold View are answered in Chapters 4 and 5. Chapter 4 replies to two non-epistemological objections to the Threshold View. Chapter 5 undermines the main arguments for the epistemological claims that conflict with the Threshold View. However, in Chapter 6 the accounts of belief and confidence are used to show that the Threshold View is probably false. But it emerges that a close cousin of the Threshold View—the “Moderate Threshold Account”—is probably true. As the Moderate Threshold Account arguably has much the same epistemological consequences as the Threshold View, there is a case to be made for rejecting one or more of the epistemological claims that drive the epistemological arguments against the Threshold View.
For my parents

Kenneth and Susan Lee
CONTENTS

Figures................................................................................................................................ iv
Tables ...................................................................................................................................v
Acknowledgments.............................................................................................................. vi
Introduction..........................................................................................................................1
Part I: Foundations.............................................................................................................31
Chapter 1: On Belief ..........................................................................................................32
Chapter 2: On Doubt ........................................................................................................112
Chapter 3: On Confidence ...............................................................................................174
Part II: Assessment ..........................................................................................................192
Chapter 4: Non-Epistemological Objections to the Threshold View ..............................193
Chapter 5: Epistemological Objections to the Threshold View.......................................231
Chapter 6: A Moderate Threshold Account.....................................................................291
Conclusion .......................................................................................................................325
Bibliography ....................................................................................................................329
FIGURES

Figure 1: Confidence spectrum with belief and disbelief thresholds.................................2

Figure 2: Sample Stroop test...........................................................................................183
TABLES

Table 1 Two sets of dubitative disposition levels............................................................163
Table 2 Five sets of sureness disposition levels...............................................................300
This dissertation has benefited from discussions with numerous people—more, I’m sure, than I have managed to remember and acknowledge here. I am tremendously grateful to my co-directors—Robert Audi and Michael DePaul—for their time, their care, their support, their instruction, their scholarship, and their mentorship. This dissertation owes much to their careful scrutiny and insightful feedback, and I owe much to their investment in me, in my work, in my development as a scholar, and in my professional career. Thank you both for everything!

I am also heavily indebted to my other committee members. I thank Alvin Plantinga for modeling philosophical and personal excellence for me, as well as for teaching and mentoring me in the early years of my Ph.D. I thank Jeff Speaks for all the face-to-face discussions, as well as the email and Skype discussions during my non-resident years, for the excellent teaching, and for the encouragement. I thank Leopold Stubenberg for the conversations—both the winding, penetrating, aporetic dialogues and the pleasant exchanges on all manner of subjects.

Among those with whom I have discussed ideas in the dissertation are Sam Alexander, Alex Arnold, Matthew Baddorf, Erik Baldwin, Kenny Boyce, Lara Buchak, Rebecca Chan, David Christensen, Nevin Climenhaga, Earl Conee, Trent Dougherty, Kenny Easwaran, Jean-Baptiste Guillon, Eric Hagedorn, Amelia Hicks, Tyler Hildebrand, Daniel Immerman, Clint Hall, Jonathan Jenkins Ichikawa, Tim Kearns,
Richard Kim, Nate King, Chris Lee, John Manchak, Lisa Miracchi, Andrew Moon, Matthew Mullins, Bradley Rettler, Lindsay Rettler, Paul Silva, Julia Staffel, Scott Sturgeon, Bill Talbott, Jeff Tolley, Vince Vitale, and Paul Windschitl. Special thanks to Eric Schwitzgebel for helpful email exchanges at crucial points in this project and for his pioneering work on belief that provided much of the groundwork for this dissertation.

I thank the Lilly Foundation for funding that helped me get my dissertation project off the ground. Thanks also to the Hesburgh Library staff (including Alan Krieger and Shari Sweet, among others) for scanning papers, acquiring books, and providing helpful dissertation-related seminars. And I am grateful to the American Philosophical Association and especially the Notre Dame Philosophy Department for funding that enabled me to present my work at conferences.

The Notre Dame Philosophy Department has the finest administrative team anywhere. Huge thanks to Catherine DeFauw, LinDa L. Grams, and Montey Holloway.

There are also those with whom I may or may not have discussed the dissertation, but to whom I’m grateful for companionship on the journey, including Gary Cheng, Elise Crull, Albert E. Doskey, Justus Ghormley, Scott Hagaman, Matt and Elise Harriger, Marcin Iwanicki, David U. Jones, Jason V. Joseph, Corbin Lambeth, Jane Lo, Greg Langmann, Petia Merica-Jones, Kathryn Nuttall, Ben Schwartz, Jack Tannous, Jacob and Lara Waldenmaier, Gary Wedemeyer, The Gluttons, and the Monday Night Men’s Group.

I am eternally grateful to the three philosophers who ignited my passion for philosophy during my sophomore year at Texas—Robert Solomon, Jessica Berry, and especially Rob Koons, my first mentor in philosophy. And no one has played a more
significant role in my philosophical formation than Brian Leftow, to whom I am grateful for the intense philosophical training and coaching, as well as for the interest in and promotion of my welfare.

There are several other teachers whom I can’t thank enough: Marilyn McCord Adams, Paddy Blanchette, J. Budziszewski, Marian David, Wendy Domjan, Janet Hindman, Don Howard, Mike Rea, Susie Wheeler, Paul Woodruff, and Sharon Worsham.

The biggest thanks go to my family. I cannot adequately express the depth of my gratitude to my wife Adel, whose love has been my primary source of strength and happiness during my graduate studies. And for the love, support, laughter, and a thousand other things, I am grateful to my parents Kenneth and Susan, my parents-in-law Ockert and Anna-Marié, my sister Amanda, my brother James, my brother-in-law Philip, my sister-in-law Allison, my nephews Adrian and Gabriel, my grandfather John, my uncle Bill, and my cousin Ben.

My parents’ gifts to me are beyond measure and beyond comparison. Mom and Dad, thank you for the love, the nurturing, the care, the guidance, the provision. Thank you for believing in me. Thank you for everything. This dissertation is dedicated to you.
1. Introduction

Five-year-old Johnny believes that Santa Claus brings him presents. But a child at school tells him there is no Santa Claus, and he begins to doubt. Months later another child tells him Santa doesn’t exist, and Johnny’s doubt grows. After a few more months, a cousin tells him there is no Santa, and Johnny then has serious doubt about Santa Claus. Finally, when his older sister tells him there’s no Santa, Johnny disbelieves that Santa brings him presents.

This little story is a story about a change in belief. Johnny starts out with belief; his belief gives way to uncertainty; and finally his uncertainty gives way to disbelief. It is also a story about a change in confidence. Johnny is initially confident that Santa brings him presents, and his confidence diminishes with each new piece of testimony. But the change in belief and the change in confidence are not two independent processes; the change in belief and the change in confidence go hand in hand.

Perhaps the change in belief simply is a change in confidence. Perhaps belief just is a sufficiently high level of confidence, and diminution of confidence below that level just is a loss of belief. That would explain the intimate connection between belief and confidence that is manifest in the story above.
This idea—that belief is nothing other than a sufficiently high degree of confidence—is known by philosophers as the “Threshold View.” Belief is confidence that exceeds the relevant “threshold” in the confidence spectrum, as illustrated in Figure 1.

![Confidence Spectrum](image)

Figure 1: The confidence spectrum with belief and disbelief thresholds

It is in many ways an attractive view. For one thing, as we have already seen, the Threshold View explains why a change in belief would go hand in hand with a change in confidence. For another thing, the Threshold View makes for a very tidy picture of the relationship between belief and confidence—much tidier than one on which belief and confidence are wholly (or even partly) distinct mental states.

Or, to approach from the opposite direction, consider the sorts of questions that arise for someone who denies the Threshold View. If belief isn’t simply a high degree of

---

1 It is also sometimes referred to as the “Lockean Thesis.” Below, however, I will distinguish the Lockean Thesis from the Threshold View. The Threshold View is a component of the Lockean Thesis, but there is more to the Lockean Thesis.
confidence, then how does belief differ from high degrees of confidence? Why does certainty (maximal confidence) seem sufficient for belief? Why do there always seem to be changes in confidence when there are changes in belief? Why does repeated diminution of confidence seem inevitably to lead in the long run to loss of belief? Why are belief and high confidence produced by the same sorts of stimuli? Why does high confidence produce much the same verbal and non-verbal behavior as belief? And why would we be endowed with two distinct kinds of mental states that are functionally so similar?

Considerations like these can make it tempting to think the Threshold View is too obviously true to be worth sustained examination. But, interestingly, while a number of philosophers have embraced the Threshold View for reasons like these, it is becoming increasingly common for philosophers to reject it. Epistemologists in particular have been unfriendly to the Threshold View, because the Threshold View is incompatible with certain combinations of prominent epistemological claims. Epistemologists who accept those combinations of claims have tried to preserve them by rejecting the Threshold View.

This dissertation is an extended assessment of the Threshold View—indeed, the most thorough such assessment to date.² The agenda here is set by the following observation: if the Threshold View is incompatible with certain epistemological principles, then we need to decide whether to reject the view or the principles. There are

² Foley (1992), Hunter (1996), and Sturgeon (2008) are the most thorough discussions of the Threshold View in the existing literature. None of these, however, discusses the range of objections to the Threshold View that I address here, and none goes as far as I do in developing and defending accounts of belief and confidence. I also conduct a closer inspection than these writers of the motivations for the objections that they address.
thus four basic tasks for this dissertation: (1) to determine whether the Threshold View really is incompatible with (combinations of) prominent epistemological claims, (2) to see what can be said in favor of the Threshold View, (3) to see what else (other than that it is incompatible with certain epistemological claims) can be said against the Threshold View, and (4) to see what can be said for the epistemological claims that conflict with the Threshold View.

The first of these tasks is carried out in this introduction. Chapters 1, 2, and 3 lay the foundations for assessing the Threshold View by providing accounts of belief, doubt, and confidence. Chapter 4 takes up some non-epistemological objections that have been raised against the Threshold View. Chapter 5 examines the reasons that have been given for the epistemological claims that have been used against the Threshold View. Finally, Chapter 6 develops a new argument against the Threshold View, as well as an argument for a close cousin of the Threshold View—what I call the “Moderate Threshold Account.”

Though somewhat weaker than the Threshold View, the Moderate Threshold Account arguably has many of the same epistemological consequences as the Threshold View. But I contend that the argument I construct for the Moderate Threshold Account is significantly stronger than the arguments for the epistemological claims that are in tension with the Moderate Threshold View. The epistemological upshot is that we should resolve the puzzles in question by rejecting the epistemological principles that come into conflict with the Threshold View.
2. Some Versions of the Threshold View

The task of this chapter is to present the epistemological claims with which the Threshold View is thought to conflict and to determine whether the conflict is genuine. But before we address that question, it is important to be clear about the view at issue here. As we’ll see in this section, the Threshold View is no monolith; there is in fact a family of related threshold views that need to be distinguished.

It was Richard Foley (1992) who brought the Threshold View into the spotlight.³ His initial statement of the view is as follows:

[B]elief-talk is a simple way of categorizing our degree of confidence in the truth of a proposition. To say that we believe a proposition is just to say that we are sufficiently confident of its truth for our attitude to be one of belief. (Foley 1992: 111)

Put like this, the claim is a semantic one—a claim about what is said when belief is ascribed. According to Foley, what a belief attribution does is to indicate a range in which the subject’s degree of confidence falls. It is similar to an attribution of shouting; if I say that you are shouting, then I indicate a range of degrees of loudness in which your vocalization falls. Attributions of belief and attributions of high confidence not only pick out the same relation (between a subject and a proposition); they have a close semantic connection—something in the vicinity of analytic equivalence or synonymy.

Two semantic options are available here: invariantist and contextualist. On an invariantist version of a semantic threshold view, attributions of belief indicate that the

³ Though there are at least gestures at the view prior to that—for example, in Stalnaker (1984: 91).
subject’s degree of confidence falls in a certain range, and the same belief-attributing sentence indicates the same range in all conversational contexts. Whereas on a contextualist semantics, the range might expand or contract in different conversational contexts. In other words, a contextualist, semantic threshold view allows the threshold to rise and fall from one conversational context to another. Suppose I am highly confident but not absolutely certain that I had oatmeal for breakfast. Could someone in one conversational context say truly “Matthew believes he had oatmeal for breakfast” while someone in another conversational context says falsely, “Matthew believes he had oatmeal for breakfast”? The contextualist says, “Yes”; the invariantist says, “No.”

Foley doesn’t say whether he thinks the belief threshold is context-sensitive or invariant, though others have taken the position that it is context-sensitive. Foley does suggest that the threshold is vague. In that case, it is impossible for us to determine for some degrees of confidence whether they are above or below the belief threshold. This is because either (a) “believes” does not have any particular extension, (b) some degrees of confidence have only partial membership in the extension of “believes,” or (c) “believes” has a particular extension and membership in it is never partial, but it is for

---


5 As is conventional, I understand an “extension” of a predicate as the set of all instances of the predicate—the set of all things that satisfy the predicate. You and I are members of the extension of “is a person,” for example. A predicate could fail to have a particular extension if it is ambiguous (e.g. “is at the bank”) or context-sensitive (e.g. “is warm”), or if it has different extensions in different possible worlds (as with “is the inventor of the zipper”). See Kölbl (2010) for the view that vague predicates are to be accounted for in terms of the last of these options.

6 Partial set membership is the foundation of “fuzzy” set theory. In fuzzy set theory, for any vague predicate $F$ there will be a function $f_F$ that maps each object in the domain of discourse to a number in the unit interval $[0, 1]$ representing the degree to which that object satisfies $F$. For example, an object that is clearly red will be assigned a number near 1 by $f_{\text{is red}}$, whereas a reddish orange object that is neither a clear case of red nor a clear case of orange will be assigned some intermediate value. See Zadeh (1965) for the classic articulation of fuzzy set theory.
some reason epistemically inaccessible to us.⁷ One can of course adopt a Threshold View on which the threshold is vague without taking a stand on which theory of vagueness is correct.⁸

Foley (1993) ultimately settles on a view according to which the threshold for belief is determined by the subject’s epistemic goals. The more strongly you prioritize avoiding error over obtaining truth, the higher your threshold is and the more confident you have to be to qualify as believing. “Believes” need not be vague or context-sensitive; it is subject-sensitive.⁹ But it is not obvious whether to count such a view as a version of the “Threshold View.” On a very broad construal, one might regard as a version of the Threshold View any view on which (a) even if two subjects are the same in all respects other than level of confidence toward a proposition p, one of them could believe p while the other does not, but (b) if two subjects are the same in all respects other than level of confidence toward p, the one with lower confidence in p believes p only if the one with higher confidence also believes p. Foley’s (1993) subject-sensitive view would then count as a threshold view, since Foley thinks goals fix the threshold, in which case two subjects who are alike in all but confidence (including their goals) have the same threshold. One of two such subjects could believe while the other does not if the former has confidence that exceeds the (goal-determined) threshold and the other does not. And

---

⁷ This is the “epistemicist” view of vagueness. See Sorensen (1988) and Williamson (1994).


⁹ Compare Hawthorne (2004) and Stanley’s (2005) subject-sensitive alternative to contextualism about knowledge.
if one such subject believes, and the other has higher confidence, then both have confidence above the (goal-determined) threshold, in which case they both believe.

However, the label “Threshold View” tends to be used more narrowly in the philosophical literature, and I propose to follow that convention. Here I will take a view to be a version of the Threshold View only if it entails that, relative to a single conversational context, a subject’s levels of confidence fully determine the truth-values of attributions of belief to that subject. Thus, if you and I have the same level of confidence in a proposition $p$, then in a given conversational context, an attribution of belief that $p$ to me will be true only if an attribution of belief that $p$ to you is true, even if we have different goals.

Semantic versions of the Threshold View thus admit of two cross-cutting divisions: there are contextualist and invariantist versions, and there are vagueness-supporting and vagueness-opposing versions. But there are also non-semantic versions of the Threshold View. Hunter (1996), for example, advocates a threshold view according to which belief reduces to degrees of confidence. There are different notions of reduction in the philosophical literature, but most of them would not require that statements about the thing reduced say the same thing as statements about that to which it is reduced. For instance, reductive materialism is the view that every mental property is identical to a physical property. To use a standard example, the property of being in pain might be the same property as the property of having C-fibers firing in one’s brain. Even if so, when I say, “I am in pain,” I am not saying that I have C-fibers firing in my brain. I may not

---

10 See Smart (2007).
even know I have C-fibers. Reductive materialism is not a semantic claim, but a
metaphysical claim about the relationship between mental properties and physical
properties. If that is the sense of “reduction” that Hunter has in mind, then his is a
metaphysical, rather than a semantic, version of the Threshold View—one that identifies
the property of believing with the property of having confidence exceeding a certain
level.

Type-reductive threshold views, like semantic threshold views, can be divided
into invariantist and contextualist versions and vagueness-supporting and vagueness-
opposing versions. On a vagueness-opposing invariantist view, there will be some
threshold level of confidence $T_B$ (say, 90% confidence) such that the property of
believing a proposition is identical to the property of having confidence above $T_B$ in that
proposition. On a vagueness-opposing contextualist view, for any conversational context
$c$, there will be some threshold level of confidence $T_{Bc}$ such that the property expressed
by “believes” in $c$ is identical to the property of having confidence above $T_{Bc}$. On a
vagueness-supporting, invariantist (type-reductive) view, the property of believing will
be identical to some property having to do with confidence that is clearly possessed at
some levels of confidence but neither clearly had nor clearly lacked at other levels of
confidence. There may or may not be an expression in English that picks out this
property. Finally, on a vagueness-supporting contextualist view, for any conversational
context $c$, there will be some threshold level of confidence $T_{Bc}$ such that the property
expressed by “believes” in $c$ is identical to some property having to do with confidence

---

11 Hunter (1996) can be read as taking the relevant property to be that expressed by “highly
confident,” which is vague (and presumably also context-sensitive).
that is clearly possessed at levels of confidence significantly above $T_{Bc}$ and clearly not possessed at levels of confidence significantly below $T_{Bc}$ but neither clearly had nor clearly lacked at levels of confidence near $T_{Bc}$.

But there is one other type of threshold view that should be on the table. Scott Sturgeon (2008) holds that belief is a *determinable* of which degrees of confidence are *determinates*. The relationship is the same as that between red and its various determinate shades (scarlet, crimson, maroon, rosewood, etc.). Depending on how determinables are to be conceived, Sturgeon’s threshold view may or may not turn out to be equivalent to the type-reductive Threshold View.

The type-reductive Threshold View does seem to entail a determinable-determinate Threshold View. For any threshold $T_B$, if there are multiple levels of confidence above $T_B$, then all the levels of confidence above $T_B$ will be *determinates* of the property of having confidence greater than $T_B$. So, since the type-reductive Threshold View identifies belief with the property of having confidence greater than $T_B$, the type-reductive Threshold View entails the determinable-determinate Threshold View.

---

12 One might formulate a “token” Threshold View on analogy with token identity theory. The distinction between state types and state tokens is familiar. If a doctor asks how many pains you’ve had today, you might say, “I’ve had three, but it was the same pain.” You’re not contradicting yourself—you’ve had three pain *tokens* of one and the same pain *type*. Whereas type identity theory (reductive materialism) identifies every mental property (every mental state type) with a physical property (a physical state type), token identity theory identifies every mental state token with a physical state token. One might hold a version of the Threshold View on which belief is not the same property as having confidence exceeding the relevant threshold, but every *token* of the former is identical to a *token* of the latter.

But it should be noted that token identity theory *sans* type identity theory is not compatible with just any metaphysics of states. For suppose one things of a state token as an *instance* of a state type and thinks of an instance of a type as constituted by the type, the object that instantiates it, and the time(s) of instantiation. In that case, an instance of a type $F$ couldn’t be identical to an instance of a type $G$, where one and the same object instantiates $F$ and $G$ at the same time(s), unless $F$ is identical to $G$. So it would be impossible to maintain token identity theory without the corresponding type identity theory. (But for a more congenial metaphysics of events, see Davidson (1970).)
what about the other direction? One might think that, where $F$ is a determinable and $G_1\ldots G_n$ are its determinates, $F$ is identical to a disjunctive property—the property of being $G_1$ or $G_2$ or…or $G_n$. Sturgeon’s determinable-determinate Threshold View, together with this “disjunctivist” view of determinables, seems to entail the type-reductive Threshold View. However, many metaphysicians find disjunctive properties suspect and thus do not conceive determinables this way.\(^{13}\) One might even think that, although determinates entail their determinables and determinables entail the possession of some determinate or other, determinables are not identical to any kind of construction out of determinates. Someone who takes that sort of view of determinables and accepts the determinable-determinate Threshold View will reject the type-reductive Threshold View.

I take it, then, that the determinable-determinate Threshold View is the least committal version. It can be combined with a type-reductive Threshold View, and the type-reductive Threshold View can be combined with a semantic Threshold View; but these are optional strengthenings of the basic threshold view. Except where otherwise indicated, I will use the label “the Threshold View” to refer to the determinable-determinate Threshold View in the rest of this dissertation.

The determinable-determinate Threshold View also admits of invariantist and contextualist versions, as well as vagueness-opposing and vagueness-supporting versions. The vagueness-opposing invariantist will say that there is some particular level of confidence $T_B$ such that all and only levels of confidence above $T_B$ are determinates of

\(^{13}\) See Armstrong (1978) for an early attack on disjunctive properties. For a careful, recent argument against disjunctive properties, see Audi (2013).
belief. The vagueness-opposing contextualist view will be that, for any conversational context \(c\), there is some particular level of confidence \(T_{Bc}\) such that the property picked out by “believes” in \(c\) is a determinable, and all and only levels of confidence above \(T_{Bc}\) are determinates of that determinable. The vagueness-supporting invariantist will say that there will be some level of confidence \(T_B\) such that levels of confidence significantly above \(T_B\) are clearly determinates of belief, levels of confidence significantly below \(T_B\) are clearly not determinates of belief, and levels of confidence near \(T_B\) are borderline cases of determinates of belief. Finally, the vagueness-supporting contextualist will say that, for any conversational context \(c\), there will be some level of confidence \(T_{Bc}\) such that levels of confidence significantly above \(T_{Bc}\) are clearly determinates of the property picked out by “believes” in \(c\), levels of confidence significantly below \(T_{Bc}\) are clearly not determinates of the property picked out by “believes” in \(c\), and levels of confidence near \(T_{Bc}\) are borderline cases of determinates of the property picked out by “believes” in \(c\).

3. Epistemological Objections to the Threshold View

We now have a pretty good idea of the range of available threshold views and have identified the basic Threshold View—the determinable-determinate Threshold View. And we have already seen why such a view is attractive. Belief and confidence must be somehow related, and the Threshold View is a very natural account of their relationship. It makes sense of the fact that strong evidence tends to produce belief and high confidence. It makes sense of the fact that belief makes us do the same sorts of things that high confidence makes us do. (As Scott Sturgeon says, belief and high
confidence *march in step.*) It explains why absolute certainty seems to entail belief. It explains why loss of confidence always seems eventually to result in loss of belief. And so on.

But the Threshold View is not without cost, and epistemologists in particular have been eager to display the epistemological costs of the view. The Threshold View has three main epistemological consequences that are seen as problematic. These consequences give rise to three epistemological objections to the Threshold View. As will emerge in later chapters, I do not endorse all the premises of the three arguments that follow. But I will give these arguments the most plausible rendering I can muster.

3.1 Pragmatic Encroachment

Suppose two (unacquainted) tourists—both ignorant about Chicago’s train system—arrive at a train platform in downtown Chicago. As a Brown Line train approaches, one of the tourists asks a passerby whether the Brown Line stops at Belmont station. The passerby says “Yes, it does” and goes on his way. The other tourist overhears the exchange and thinks to herself, “I wonder whether many people will get off at Belmont station. Well, I’ll find out when we stop there.” And nothing seems amiss about her thought; she is justified in believing the train she is about to board stops at Belmont.

The inquirer, however, has a pressing need to get to Belmont and cannot afford to take the wrong train. (He must pay off his bookie within the hour, or he’ll lose a finger.) He is not satisfied with asking one passerby and double-checks, then triple-checks, with other travelers. And that also seems quite appropriate. The inquirer is *not* initially
justified in believing that the train stops at Belmont—he needs further evidence to form a justified belief.\textsuperscript{14}

Now, before the inquirer double-checks, the two tourists have the same evidence that the Brown Line stops at Belmont. But one of them is justified in believing that the Brown Line stops at Belmont, while the other isn’t justified in so believing. It must be a difference in the \textit{stakes} that makes the justificatory difference. Pragmatic factors “encroach”\textsuperscript{15} upon the epistemic status of beliefs.

Degrees of confidence, however, are not plausibly thought to be subject to pragmatic encroachment. If a coin is biased toward tails so that it is known to have a 60\% chance of landing tails on the next toss, how could rational confidence in the coin’s landing tails be anything other than 60\%? And the requirement to proportion confidence to evidence remains plausible even when it is hard to quantify the strength of the evidence. Even if it is \textit{impossible} to quantify the strength of the evidence, surely this much is true: two subjects should never have different degrees of confidence in the same proposition if there is no difference in the strength of their evidence. So, in the case at hand, one and the same level of confidence that the Brown Line stops at Belmont is justified for both the inquirer and the eavesdropper.

This is a problem for the Threshold View, however. Stick for now with a naïve invariantist, vagueness-opposing, determinable-determinate version:

\textsuperscript{14} To be clear: I am using “justified in believing” in a way that does not entail that the subject holds the belief. You might be justified in believing that Akron is smaller than Tokyo without ever having formed the belief. This is sometimes called “propositional justification” and is distinguished from “doxastic justification,” which does imply holding a (justified) belief. See Feldman (2004: 201) on the distinction.

\textsuperscript{15} The term “pragmatic encroachment” was coined by Jonathan Kvanvig.
TVN  There is a degree of confidence $T_B$ such that believing a proposition $p$ is a determinable that has as its determinates all and only the degrees of confidence in $p$ higher than $T_B$.

But the level of confidence that is rational for both the inquirer and the eavesdropper either is or isn’t above $T_B$. If it is, then, given the Threshold View, both the inquirer and the eavesdropper are justified in believing the Brown Line stops at Belmont. If the rational level of confidence isn’t above $T_B$, then, given the Threshold View, neither the eavesdropper nor the inquirer is justified in so believing. Neither result is correct. The Threshold View thus fails to accommodate the encroachment of stakes on justification. This is the “Pragmatic Encroachment Objection” to the Threshold View.\textsuperscript{16}

3.2 Naked Statistical Evidence

A widely affirmed principle among legal scholars and judges is that a case cannot be proven on the basis of “naked statistical evidence.” For example, a plaintiff whose car was hit by a bus cannot prove a particular bus company to be at fault merely on the grounds that a very high percentage of the buses in the area are run by that company.\textsuperscript{17}

\textsuperscript{16} Fantl and McGrath (2002) introduced the train case to motivate pragmatic encroachment. See Weatherson (2005), Fantl and McGrath (2009), and Ross and Schroeder (forthcoming) for discussion of the conflict between pragmatic encroachment and TVN.

\textsuperscript{17} See Smith v. Rapid Transit (http://masscases.com/cases/sjc/317/317mass469.html) for the actual case, and see Shaviro (1989) for discussion of the hypothetical “Blue Bus Case” based thereon. Interestingly, the principle is widely held to apply even to the “preponderance of evidence” standard of proof used in civil cases, and not just to the “beyond reasonable doubt” standard. (Smith v. Rapid Transit was a civil case.)
An applicable base rate is not sufficient proof, even where the base rate is quite high. Some other evidence (such as eyewitness testimony) is needed.

But a similar principle seems to hold for justified belief: a subject is not justified in outright believing a proposition on the sole basis of naked statistical evidence. Suppose I see my parked car hit by a bus, but it’s too dark to make out the color of the bus. Suppose I know that 97% of the buses in the city are blue. That does not justify me in believing outright that the bus that hit my car was blue. Perhaps I am justified in being 97% confident that it was blue. And I am justified in believing outright that the probability (given my evidence) that the bus was blue is 97%. But unqualified belief, like a judge’s ruling, requires more than naked statistical evidence.

Now suppose that the Threshold View (TVN) is correct: there is a degree of confidence $T_B$ such that to believing a proposition $p$ is a determinable whose determinates are all and only degrees of confidence in $p$ higher than $T_B$. For illustrative purposes, suppose that degrees of confidence can be measured on a scale from 0 (the lowest possible degree of confidence) to 1 (the highest possible degree of confidence), and suppose that the belief threshold $T_B = 0.95$. Then I cannot be justified in being 97% confident that a blue bus hit my car without being justified in outright believing that a blue bus hit my car. The Threshold View is thus in conflict with the idea that naked statistical evidence does not justify belief. This is the “Statistical Evidence Objection.”

---

18 I do not assume, here or anywhere in the dissertation, that numerical expressions of confidence refer to any particular levels of confidence. (Nor do I assume the contrary.) At times an example is easier to state in terms of numerically precise confidence. But I mean no endorsement of the questionable view that levels of confidence have the sort of structure that would be required for ratio-level measurement.

19 Nor does it help to raise the threshold for belief. No matter how high $T_B$ is (short of 1), we can construct a case in which my only evidence bearing on a proposition $p$ is a base rate that makes it
3.3 The Lottery Objection

The third epistemological objection to the Threshold View is a version of Henry Kyburg’s Lottery Paradox.\textsuperscript{21} Suppose again that the belief threshold $T_B = 0.95$. And suppose we accept, as a consequence of the Threshold View, Foley’s (1993: 140) “Lockean Thesis”:\textsuperscript{22}

\textbf{Lockean Thesis} \quad For any subject $s$ and proposition $p$, it is rational for $s$ to believe $p$ if and only if it is rational for $s$ to have confidence in $p$ that exceeds $T_B$.

Then, given the supposition that $T_B = 0.95$, we have:

\textbf{LT}_{0.95} \quad For any subject $s$ and proposition $p$, it is rational for $s$ to believe $p$ if and only if it is rational for $s$ to be over 95% sure that $p$.

reasonable for me to have confidence above $T_B$ for $p$ but does not make it reasonable for me to believe $p$ (since the evidence is purely statistical). That is to say, \textit{if} the principle that naked statistical evidence doesn’t justify belief is correct, then a counterexample to the Threshold View can be constructed for any threshold short of 1. We’ll reexamine that principle below.

\textsuperscript{20} The claim that naked statistical evidence does not justify outright belief is not new. It appears, for example, in Kaplan (1996), Nelkin (2000), and Adler (2005). But only very recently (in Buchak (2013)) has it featured in an argument against the Threshold View.

\textsuperscript{21} See Kyburg (1961).

\textsuperscript{22} So named because Foley (1993: 140) finds inspiration for the Lockean Thesis in certain passages of Locke’s \textit{Essay Concerning Human Understanding}. See the \textit{Essay}, bk. 4, chs. 15 and 16.
Now suppose at this year’s departmental picnic a prize is being awarded by lottery. Suppose, given the information available, it is rational for me to believe the following: (i) each of exactly twenty-five department members $s_1, \ldots, s_{25}$ holds a (distinct) ticket, (ii) the lottery is fair, and (iii) there will be exactly one winner. In that case, for each $s_i$ ($1 \leq i \leq 25$), it is rational for me to be 96% sure that $s_i$’s ticket will lose. So, by LT$_{0.95}$, for each $s_i$, it is rational for me to believe that $s_i$’s ticket will lose.

This is a strange situation. It is rational for me to believe that $s_1$’s ticket will lose, and it is rational for me to believe that $s_2$’s ticket will lose, …, and it is rational for me to believe that $s_{25}$’s ticket will lose. Yet it was stipulated in the description of the case that it is rational for me to believe that one of these people holds a winning ticket.

This situation gives us a paradox when we invoke two plausible and widely accepted epistemic principles. First, it is always rational to believe the conjunction of any two things it’s rational to believe. For example, if it is rational for me to believe you have beef in your freezer and it is rational for me to believe you have mutton in your freezer, then it is rational for me to believe you have both beef and mutton in your freezer.

---

23 Since 24 out of 25 tickets will lose and the lottery is fair, each ticket has a $\frac{24}{25} = 96\%$ chance of losing.

24 Of course, proponents of the Statistical Evidence Objection will get off the boat at this point. The evidence that a given lottery ticket won’t win is purely statistical. So, by the principle that purely statistical evidence never justifies belief, no one is justified before the draw in believing a given ticket will lose (provided the lottery is fair and has more than one ticket). But here we are interested in an independent objection to the Threshold View arising in lottery cases. So, for the sake of argument, we set aside the principle that purely statistical evidence cannot justify belief. It is nevertheless worth noting that some epistemologists have invoked this principle to prevent lottery paradoxes from arising. In Chapter 5 I will discuss Nelkin’s (2000) attempt to resolve the Lottery Paradox in this way.

25 One must keep the *de dicto* reading firmly in view. It is rational for me to believe that someone or other among the 25 ticket holders will win. It is not rational for me to believe of anyone in particular that they hold a winning ticket.
freezer. Second, it is never rational to believe a straightforward contradiction that conjoins a proposition with its negation. For example, it is never rational to believe that you’re at home and you’re not at home. More formally:

**Conjunction Rule** For any subject \( s \) and propositions \( p \) and \( q \), if it is rational for \( s \) to believe \( p \) and it is rational for \( s \) to believe \( q \), then it is rational for \( s \) to believe \( (p \& q) \).

**Non-contradiction** For any subject \( s \) and proposition \( p \), it is not rational for \( s \) to believe \( (p \& \neg p) \).

Now, since for all \( i \) \((1 \leq i \leq 25)\) it is rational for me to believe that \( s_i \)’s ticket will lose, it is also (by the Conjunction Rule) rational for me to believe the following conjunction: \( s_1 \)’s ticket will lose and \( s_2 \)’s ticket will lose and… and \( s_{25} \)’s ticket will lose.\(^{26}\) Call that conjunction “\( C \)” But since I know that there will be a winner and that \( s_1, \ldots, s_{25} \) are the only ticket holders, it is rational for me to believe the denial of \( C \)—that is, it’s rational for me to believe that it’s *not* the case that \( s_1 \)’s ticket will lose *and* \( s_2 \)’s ticket will lose *and*… and \( s_{25} \)’s ticket will lose. Some ticket has to win. So it is rational for me to

---

\(^{26}\) This does not follow immediately from the Conjunction Rule, but from repeated applications of the Conjunction Rule (24 applications, to be precise). Alternatively, one could prove a generalized conjunction rule from our binary Conjunction Rule via mathematical induction, and then obtain the result in question by a single application of the generalized conjunction rule. The proof of the generalized conjunction rule is quite simple. The base case is trivial: for any \( s \) and \( p \), if it is rational for \( s \) to believe \( p \), then it is rational for \( s \) to believe \( p \). And the inductive step is just a substitution instance of our binary Conjunction Rule: for any \( s \), any \((p_1 \& \ldots \& p_{n-1})\), and any \( p_n \), if it is rational for \( s \) to believe \((p_1 \& \ldots \& p_{n-1})\) and it is rational for \( s \) to believe \( p_n \), then it is rational for \( s \) to believe \((p_1 \& \ldots \& p_{n+1})\). (Note that \((p_1 \& \ldots \& p_n)\) is just another way of writing \((p_1 \& \ldots \& p_{n-1}) \& p_n\).)
believe $C$ and it is rational for me to believe $\sim C$. By one more application of the Conjunction Rule, it is rational for me to believe $(C \& \sim C)$. According to Non-contradiction, however, it cannot be rational for me to believe $(C \& \sim C)$. So from the Threshold View, together with two plausible and widely accepted epistemic principles, we get a paradox.

Alternatively, we could generate a paradox more simply by invoking a single epistemic principle:

**Consistency**  For any subject $s$ and propositions $p_1 \ldots p_n$, if it is rational for $s$ to believe that $p_1 \ldots p_n$ are jointly inconsistent ($p_1 \ldots p_n$ jointly entail a contradiction), then either it is not rational for $s$ to believe $p_1$ or it is not rational for $s$ to believe $p_2$ or…or it is not rational for $s$ to believe $p_n$.

In short: inconsistent beliefs cannot all be rational, at least not where the subject recognizes (or should recognize) that they are inconsistent. If the Threshold View is correct, then it is rational for the subject to hold beliefs that the subject recognizes to be inconsistent: ticket number 1 will lose, ticket number 2 will lose,…, ticket number $n$ will lose, and either ticket number 1 will not lose or ticket number 2 will not lose or…or ticket

---

27 Why does the antecedent of Consistency require that the subject (be in a position to) recognize the inconsistency? Isn’t it always irrational to hold inconsistent beliefs? Arguably not. In some cases an inconsistency is extremely difficult to discover. To use a well-worn example, Bertrand Russell made a major discovery when he found Gottlob Frege’s axioms for arithmetic in the *Grundgesetze der Arithmetik* to be inconsistent. It is hard to buy the claim that one or more beliefs in an inconsistent set must be irrational, when inconsistencies can remain unnoticed for years by the world’s greatest logicians. What is irrational is to go on holding inconsistent beliefs even after one notices the inconsistency. Or so the proponents of Consistency aver.
number \( n \) will not lose. The Threshold View thus violates Consistency. So the proponent of the Threshold View is committed to rejecting Consistency and either the Conjunction Rule or Non-contradiction.\(^{28}\)

Of course, the defender of the Threshold View may want to set the threshold for belief higher than 95\% confidence. But as long as \( T_B < 1 \), there will always be a lottery-based paradox arising from the Threshold View.\(^ {29}\) Call this objection the “Lottery Objection” to the Threshold View.

\(^{28}\) The Conjunction Rule can plausibly be viewed as a stronger thesis than Consistency. One might well think that it’s always irrational to hold inconsistent beliefs but not always rational to conjoin one’s rational beliefs. So one could accept Consistency while rejecting the Conjunction Rule. But it’s not easy to accept the Conjunction Rule while rejecting Consistency. Non-contradiction is about as sure an epistemic principle as any. And the following principle is also rather plausible: if it is rational to believe that \( p_1 \ldots p_n \) are inconsistent, then it is rational to believe \(~(p_1 \& \ldots \& p_n)\). Call this principle Conjunction Denial. Consistency is a consequence of the Conjunction Rule, Non-contradiction, and Conjunction Denial. Suppose for conditional proof that it is rational for me to believe that \( p_1 \ldots p_n \) are inconsistent. Now suppose for reductio that it’s rational for me to believe \( p_1 \) and rational for me to believe \( p_2 \) and...and rational for me to believe \( p_n \). By (repeated applications of) the Conjunction Rule, it is rational for me to believe \((p_1 \& \ldots \& p_n)\). And by Conjunction Denial, it is rational for me to believe \(~(p_1 \& \ldots \& p_n)\). By the Conjunction Rule again, it is rational for me to believe \((p_1 \& \ldots \& p_n) \& ~(p_1 \& \ldots \& p_n)\). But by Non-contradiction, it is not rational for me to believe \((p_1 \& \ldots \& p_n) \& ~(p_1 \& \ldots \& p_n)\). Contradiction. So our supposition was false; either it is not rational for me to believe \( p_1 \) or it is not rational for me to believe \( p_2 \) or...or it is not rational for me to believe \( p_n \). And this completes our conditional proof of Consistency.

\(^{29}\) For any threshold \( T_B \) such that \( T_B < 1 \), the paradox can be generated using a lottery with \( n \) tickets where \( n > \frac{i}{1-T_B} \). Proof: The paradox is generated whenever the probability of each ticket’s losing is greater than the threshold \( T_B \). And since it is a theorem of the probability calculus that the probability of \(~p\) is equal to 1 minus the probability of \( p \), the probability of each ticket’s losing is greater than \( T_B \) whenever the probability of each ticket’s winning is less than \( 1 - T_B \). In a fair lottery with \( n \) tickets, the probability of each ticket’s winning is \( \frac{1}{n} \). So the paradox can be generated by any lottery with \( n \) tickets, where \( \frac{1}{n} < 1 - T_B \). And multiplying both sides by \( \frac{n}{1-T_B} \), we get \( n > \frac{1}{1-T_B} \). So for any threshold \( T_B < 1 \), the paradox arises for a lottery with \( n \) tickets where \( n > \frac{1}{1-T_B} \).
4. Locating the Conflict

If the arguments of the previous section are right, then the Threshold View has some very striking epistemological consequences. The Threshold View commits us to denying three epistemological theses that have received endorsement and defense in recent literature:

**Pragmatic Encroachment**  
Stakes make a difference to epistemic justification of belief.

**Ban on Purely Statistical Justification (BPSJ)**  
A subject is never justified in believing a proposition on the basis of purely statistical evidence.

**Consistency**  
Inconsistent beliefs cannot all be rational, at least not where the subject recognizes (or should recognize) that they are inconsistent

Epistemological objectors to the Threshold View have evidently found the attractions of the Threshold View not worth the cost of rejecting these epistemological claims. And the chapters ahead provide a careful assessment of that judgment. But we should pause to ask: is the Threshold View really incompatible with these epistemological claims?

It is obvious that there is no formal inconsistency between the Threshold View and the epistemological claims above. The Threshold View might be combined with Pragmatic Encroachment by allowing stakes to make a difference to the epistemic
justification of \textit{confidence}, as well as belief. The Threshold View could be combined with BPSJ by denying that \textit{high confidence} is ever justified on the basis of purely statistical evidence. And the same move would avoid the clash with Consistency in lottery cases (since our evidence for lottery propositions is purely statistical).

So there are some auxiliary assumptions that are involved in generating the inconsistency. The Pragmatic Encroachment Objection relies on an assumption like

\textbf{Confidence Purism} \ Stakes make no difference to the epistemic justification of confidence.

And the Statistical Evidence and Lottery Objections employ something like

\textbf{Confidence Sufficiency} \ It is rational to be highly confident of a proposition for which one has very strong (even if purely statistical) evidence.\textsuperscript{30}

In fact, Confidence Sufficiency, if it is understood as supplying a sufficient condition for rational high confidence, could serve to generate the inconsistency between Pragmatic Encroachment and the Threshold View. (One need only find a case in which there is very strong evidence for a proposition that, because of stakes, should not be believed.) So the concern is really that the Threshold View is incompatible with the

\textsuperscript{30} Confidence Sufficiency can be thought of as a special case of a proportioning thesis to the effect that confidence should be proportioned to the strength of one’s evidence.
combination of Confidence Sufficiency (and Confidence Purism) with Pragmatic Encroachment, BPSJ, and Consistency.

Something further is needed: the assumption that there are cases in which there is very strong evidence for a proposition but (a) the stakes are high (in the sense relevant to Pragmatic Encroachment), (b) the evidence is purely statistical, or (c) the evidence is evidence for a lottery proposition and the context is a lottery context (like the case detailed in §3.3). But such cases are easy to construct. So, having identified that additional assumption, we’ll set it aside.

Even with these additional assumptions, however, we still do not have any inconsistencies. For suppose you are in possession of very strong, purely statistical evidence that \( p \) (for some proposition \( p \)). Then, by Confidence Sufficiency, you are justified in being highly confident that \( p \). Let’s assume for the sake of illustration that, if the Threshold View is true, then the threshold is no higher than 0.95 and that you are justified in being more than 95% confident that \( p \). By BPSJ, you are not justified in believing that \( p \), since we are assuming your evidence is purely statistical.

Now, what follows from the Threshold View is that you are justified in having a level of confidence that is a determinate of belief, but you are not justified in believing. That is not formally contradictory. Someone who embraces the auxiliary assumptions identified above and wants to reconcile the Threshold View with BPSJ might say that you can be justified in having a level of confidence that is a determinate of belief even when you are not justified in believing. What is needed to rule this out is a principle bridging (epistemic) evaluation of belief and (epistemic) evaluation of its determinates.
Foley’s Lockean Thesis (mentioned above) would seem to provide the right sort of bridge:

**Lockean Thesis**  For any subject $s$ and proposition $p$, it is rational for $s$ to believe $p$ if and only if it is rational for $s$ to have (some degree of) confidence in $p$ that exceeds $T_B$.

Foley (1992) seems to assume that the Lockean Thesis just falls out of the Threshold View and the claim (of which Confidence Sufficiency is a special case) that confidence should be proportioned to evidence. Foley (2009), however, says only that the Threshold View and the proportioning idea “suggest” the Lockean Thesis. How closely *is* the Lockean Thesis connected with the Threshold View and proportioning idea?

We first need to notice that there is an ambiguity in the Lockean Thesis. What is it that is rational if and only if believing $p$ is rational? Is it that there is some particular degree of confidence such that it is rational to have *it* toward $p$? Or is it that it is rational to have some degree of confidence or other toward $p$?

What is needed to generate a problem for the Threshold View is the former reading. Confidence Sufficiency isn’t charitably read as saying that strong statistical evidence makes it rational to have *just any* high degree of confidence. That 99% of $F$’s are $G$’s justifies being nearly certain that this $F$ is a $G$, but it does not justify being absolutely certain that this $F$ is a $G$. We should understand Confidence Sufficiency as saying that strong statistical evidence makes some particular high degree (or degrees) of
confidence rational. If we then read the Lockean Thesis as saying that belief is rational if and only if there is some threshold-surpassing degree of confidence that is rational, we get a conflict with BPSJ and Confidence Sufficiency. We get no such conflict, given the reading of Confidence Sufficiency I have just defended, if the Lockean Thesis is taken to say that belief is rational if and only if it’s rational to have just any threshold-surpassing degree of confidence.

Now, does the Lockean Thesis understood in the former way follow from the Threshold View (perhaps given that confidence should be proportioned to evidence)? Consider the following principle relating properties of determinates (in particular, determinate relations) and properties of their determinables:

**Determinate-Determinable Transfer (TBT)** For any relations \( R_1 \) and \( R_2 \), any relata \( x \) and \( y \), and any higher-order property \( \Phi \), if \( R_1 \) is a determinable of which \( R_2 \) is a determinate, then if \( \Phi \) applies to \( x \)’s being \( R_2 \)-related to \( y \), then \( \Phi \) applies to \( x \)’s being \( R_1 \)-related to \( y \).

**Determinable-Determinate Transfer (BTT)** For any relation \( R \), any relata \( x \) and \( y \), and any higher-order property \( \Phi \), if \( R \) is a determinable and \( \Phi \) applies to \( x \)’s being \( R \)-related to \( y \), then there is a relation \( R^* \) that is a determinate of \( R \) such that \( \Phi \) applies to \( x \)’s being \( R^* \)-related to \( y \).

The Lockean Thesis is entailed by TBT, BTT, and the Threshold View. If you’re justified in believing that \( p \), and if believing \( p \) is a determinable whose determinates are
degrees of confidence above $T_B$, then by BTT there’s a degree of confidence above $T_B$ that is rational for you to have toward $p$. And if there’s a degree of confidence above $T_B$ that is rational for you to have toward $p$ and if that degree of confidence is a determinate of belief, then by TBT it is rational for you to believe $p$. It is tempting to think that these two principles establish the link between the Threshold View and the Lockean Thesis.

However, TBT is false, at least if the Threshold View is true. Let $\Phi$ be the property of being irrational. It is not irrational for me to believe that my parents are in Texas now (they usually are and would surely have told me if they aren’t). But it is irrational for me to be maximally confident that my parents are in Texas now (they could have taken a day trip out of state and forgotten to mention it). I shouldn’t be as confident that my parents are in Texas as I am that $2 + 2 = 4$, that the sun exists (or did so 8 minutes ago, anyway), that I am more than 10 years old, that I have hands, and many other things. So my being absolutely certain my parents are in Texas has a property—irrationality—that my believing my parents are in Texas lacks. TBT is false.

And BTT is also false. I am obligated (let’s suppose) to give money to charity. And giving money to charity is a determinable, the determinates of which are giving particular amounts of money to charity. But there is no particular amount of money that I am obligated to give to charity.\(^{31}\)

\(^{31}\) Here is another problem with BTT. It seems likely that some determinable relations have ultimate determinates—determinates that are not themselves determinables. Indeed, if particular degrees of confidence are determinates of belief, then they are very good candidates for determinates that are not themselves determinables. But let $\Phi$ be the property of being an instance of a determinable, and suppose $R$ is an ultimate determinable—a determinable whose determinates are not themselves determinables. Then while $\Phi$ applies to $x$’s bearing $R$ to $y$, $R$ has no determinate $R^*$ such that $\Phi$ applies to $x$’s bearing $R^*$ to $y$. Which is contrary to BTT.
The thing to notice is that the counterexample to TBT employs a kind of *forbiddance*, and the counterexample to BTT employs a kind of *obligation*. A determinate can be forbidden without its determinable being forbidden. And a determinable can be obligatory without any of its determinates being obligatory. But the following relationships do seem to hold:

**TBO**  If a determinate is obligatory, then its determinable is obligatory.

**TBP**  If a determinate is permissible, then its determinable is permissible.

**BTF**  If a determinable is forbidden, then at least one of its determinates is forbidden.

**BTP**  If a determinable is permissible, then at least one of its determinates is permissible.

And it follows from TBP that

**BTF**  If a determinable is forbidden, then all of its determinates are forbidden.\(^{32}\)

\(^{32}\) If a determinable has an unforbidden—i.e. permissible—determinate, then, by TBP, the determinable itself is unforbidden—i.e. permissible. So forbidden determinables have only forbidden determinates.
TBP and BTP, together with the Threshold View, could underwrite a version of the Lockean Thesis that concerns rational permissibility. If you’re rationally permitted to believe \( p \), then, since degrees of confidence above \( T_B \) are determinates of belief, there’s some degree of confidence above \( T_B \) that you’re rationally permitted to have toward \( p \). And if you’re rationally permitted to have some degree of confidence above \( T_B \) toward \( p \), then, since degrees of confidence above \( T_B \) are determinates of belief, you’re rationally permitted to believe \( p \).

So the Threshold View is in conflict with versions of Pragmatic Encroachment, the Ban on Purely Statistical Justification, and Consistency that concern rational permissibility. Or, more carefully, there is such a conflict given a version of Confidence Sufficiency that concerns rational permissibility. And it should be added that the Threshold View is in conflict with rational-obligation versions of Pragmatic Encroachment, BPSJ, and Consistency, given a rational-obligation version of Confidence Sufficiency. Suppose, for instance, that it’s obligatory, when you have strong purely statistical evidence that \( p \), to have a degree of confidence that is a determinate of belief. Then by TBO it is obligatory to believe \( p \). But that’s contrary to a rational-obligation version of BPSJ.\(^{33}\)

Those who find these epistemic principles plausible are faced with a puzzle. The Threshold View has a lot going for it, but it cannot be reconciled with these principles concerning rational permissibility. An assessment of the Threshold View will require

\(^{33}\) Notice, though, that a rational-obligation version of the Lockean Thesis is doubtful. You might be obliged to have a degree of confidence in some small, high range, even if there is no particular degree of confidence you are obliged to have. You’d then be obligated to believe, even though there is no determinate of belief that is obligatory for you.
considering the relative merits of the Threshold View and these epistemic principles.

That is the task of the chapters that follow.
PART 1

FOUNDATIONS
CHAPTER 1:
ON BELIEF

1. Introduction

Belief, doubt, and confidence are mental states, and the question how they are related falls under the philosophy of mind. But so far discussions of this question have made minimal use of considerations from the philosophy of mind—epistemology has been the focus. One of the chief tasks of this dissertation is to begin remedying that deficiency.

We will consider some of the main views of belief that philosophers of mind have taken: dispositionalism, role functionalism, realizer functionalism, representationalism, and interpretationism. The account defended here will be incompatible with realizer functionalism, but neutral among the others. I will therefore give arguments against realizer functionalism (§3). The account of belief defended here, together with the account of confidence offered in Chapter 3 (which is built on the account of doubt in Chapter 2), will provide the groundwork we need to assess the Threshold View.

2. The Major Accounts of Belief

Schwitzgebel (2014) makes a substantial contribution to the task of bringing order to the blooming, buzzing confusion of ideas about belief in the contemporary philosophy
of mind literature. Schwitzgebel distinguishes four major families of views about what it is to believe a proposition: dispositionalism, functionalism, representationalism, and interpretationism. Each of these is a family of views, the members of which may share only family resemblances or at most a common “spirit.” The families lack rigid boundaries, and there are plenty of hybrid views. Still, understanding the main ideas that characterize each family helps to give one a sense of the options for accounts of belief that have in recent decades been regarded as live options. While an in-depth treatment of these options is not necessary for understanding the account of belief to be defended in this chapter, a brief overview of the major accounts of belief will be helpful.

2.1 Dispositionalism

The dispositionalist family includes some of the most straightforward views of belief. Consider, for instance,

**Assertive Dispositionalism**  For any proposition \( p \), to believe that \( p \) is to have the disposition to assert that \( p \) when one’s sole aim is to assert the truth concerning whether \( p \).

---

34 Schwitzgebel also discusses eliminativism—the view that there are no beliefs—and instrumentalism—the view that (roughly) the function of belief attribution is prediction and explanation and that this function can be fulfilled even if beliefs are not real (or only real in the way that centers of gravity or vector components are real). These views will not concern us here. The account to be defended in this chapter answers the question what it would take for a subject to have a belief. It does not imply any stand on whether any subject actually has what it takes, or what the function of belief attribution is.

35 Cf. Kaplan (1996: 109). *N.B.*: Kaplan is not trying to capture the everyday notion of belief, but is offering an “explicative definition” of belief—a precise and philosophically useful definition of a concept in the neighborhood of the everyday notion of belief.
This is a “single-track” dispositionalist view; it identifies a single disposition with which to identify believing a given proposition. “Multi-track” dispositionalist views require the subject who believes a proposition to have multiple dispositions. For example,

**Complex Dispositionalism** For any proposition $p$, to believe that $p$ is to have (i) the disposition to assert that $p$ when one’s sole aim is to assert the truth concerning whether $p$, (ii) the disposition to be surprised at apparently conclusive evidence against $p$, (iii) the disposition to use $p$ as a premise in reasoning, and (iv) the disposition to believe propositions that are obvious logical consequences of $p$.

As a first pass at characterizing dispositionalism in general, we might say that it is the view that, for any proposition $p$, some instance of the following schema will be true:

**Dispositionalism Schema** To believe that $p$ is to have the disposition to $\phi_1$ in situation $X_1$ and the disposition to $\phi_2$ in situation $X_2$ and…and the disposition to $\phi_n$ in situation $X_n$.

The Dispositionalism Schema concerns so-called “canonical dispositions,” which are specified in terms of a manifestation and a manifestation condition (a.k.a. stimulus conditions or triggering conditions or realization conditions). See Choi and Fara (2012: §1.1) and Audi (1994: 421).

---

dissolving, and the circumstance of manifestation is being placed in water. In the case of believing that, say, pearls are white, a plausible manifestation might be affirming the sentence “Pearls are white” in circumstances where one is asked what color pearls are.

Dispositionalism can be formulated in terms of the Dispositionalism Schema:

**Dispositionalism**  For any proposition \( p \), some instance of the Dispositionalism Schema for \( p \) will be true.

More explicitly:

**Dispositionalism***  For any proposition \( p \), there are manifestations \( \phi_1, \ldots, \phi_n \) and circumstances of manifestation \( X_1, \ldots, X_n \) such that to believe that \( p \) is to have the disposition to \( \phi_1 \) in situation \( X_1 \) and the disposition to \( \phi_2 \) in situation \( X_2 \) and… and the disposition to \( \phi_n \) in situation \( X_n \).

The order of the quantifiers here is important. It would be implausible to claim

**Dispositionalism****  There are manifestations \( \phi_1, \ldots, \phi_n \) and circumstances of manifestation \( X_1, \ldots, X_n \) such that, for any proposition \( p \), to believe that \( p \) is to have the disposition to \( \phi_1 \) in situation \( X_1 \) and the disposition to \( \phi_2 \) in situation \( X_2 \) and… and the disposition to \( \phi_n \) in situation \( X_n \).
Dispositionalism** implies that every belief is to be identified with the same conjunction of dispositions. That view would be a non-starter. The belief that pearls are black and the belief that pearls are white must be distinct. But if both are identified with the same conjunction of dispositions, then (by transitivity of identity) they are not distinct.

Dispositionalism(*) still does not quite capture the view that dispositionalists promote. Dispositionalism(*) could be true even if there is no relationship between the dispositions with which the belief that pearls are white is identified and the dispositions with which the belief that grass is green is identified. But dispositionalists think there is some interesting relationship between these dispositions. Consider again

**Assertive Dispositionalism** For any proposition $p$, to believe that $p$ is to have the disposition to assert that $p$ when one’s sole aim is to assert the truth concerning whether $p$.

Assertive Dispositionalism systematically relates the various belief-constituting dispositions. The belief that pearls are white is the disposition to assert that pearls are white when one’s aim is to assert the truth about whether pearls are white. The belief that grass is green is the disposition to assert that grass is green when one’s aim is to assert the truth about whether grass is green. Assertive Dispositionalism thus finds some fairly natural (rather than gerrymandered) relation $R$ that a subject may stand in to a proposition and claims that to believe a proposition is to stand in $R$ to that proposition. There is nothing distinctively dispositionalist about identifying such a relation; but the particular
relation that the Assertive Dispositionalist chooses is a disposition-involving relation. The content of the belief enters into both the manifestation and the stimulus condition.

So we may characterize dispositionalism a bit more accurately by supplementing Dispositionalism(*) with the following addendum:

\[ \text{Dispositionalism}^+ \quad \text{For any propositions } p \text{ and } q, \text{ the canonical formulations (in terms of manifestation and stimulus condition) of the dispositions with which the belief that } q \text{ is identified differ from the canonical formulations of the dispositions with which the belief that } p \text{ is identified only by substitutions of sentences expressing } q \text{ for sentences expressing } p. \]

From this point forward I will use the lower-cased “dispositionalism” to name the conjunction of Dispositionalism(*) with Dispositionalism$^+$.  

### 2.2 Functionalism

The basic idea (or, anyway, the rallying cry) of functionalism about belief is that belief (like any other mental state) is to be understood in terms of its functional role.$^{37}$ Within the functionalist family, one finds different understandings of the notion of a functional role and different ideas about how belief is related to its functional role.

According to the dominant conception, the functional role of a mental state has to do with the causes and effects of that state. Consider the painful sensation one has upon

$^{37}$ See van Gulick (2009).
hitting one’s thumb with a hammer. That sensation is liable to be caused in certain ways
(mainly ways of stimulating the nerves by sharp compression of the thumb), and it tends
to have certain characteristic effects (withdrawing the hand, groaning, cursing, etc.). For
many functionalists, a mental state’s functional role is simply the pattern of typical causes
and effects of that mental state.

Other functionalists—“teleofunctionalists”—tell a somewhat different story about
functional roles. Teleofunctionalists identify a mental state’s functional role, not with the
*typical* causes and effects of that state, but with the *proper* causes and effects of that state.
A mental state’s functional role is to be specified in terms of what causes that state and
what results from that state when the organism is functioning properly (i.e. healthily—
without dysfunction).

There are also two main divisions among functionalists concerning the
relationship between a mental state and its functional role. The “realizer functionalist”
holds that pain is identical to whatever properties play the pain role—that is, the
properties that are caused by damage to the body and cause wincing, crying, cursing, etc.
The “role functionalist” identifies pain with the role itself: the property of being in pain is
not the property that plays the pain role, but, rather, the property of having some property
or other that is caused by damage to the body and causes wincing, crying, cursing, etc.
Realizer functionalism identifies a mental state with a first-order state (e.g. a brain state).
Role functionalism identifies a mental state with a second-order state—the state of having
a first-order state that plays the appropriate causal role. Role functionalism is designed to

38 These are typically assumed to be neurophysiological properties.
allow physiologically very different subjects to be in the same mental states (they can have different first-order properties while sharing the relevant second-order property).

2.3 Representationalism

A closely related family of views is the “representationalist” family. The representationalist maintains that when a subject believes a proposition \( p \), there is an internal state of the subject (or of the subject’s brain) that represents \( p \). Different representationalists have different accounts of what it is for an internal state to represent a proposition.\(^{39}\) Fodor (1990), for instance, thinks representation of propositions is derivative from representation of properties and advocates the “Asymmetric Dependence Theory” of property representation. According to the Asymmetric Dependence Theory, an internal state \( S_F \) represents a property \( F \) if and only if there is a causal law connecting \( F \) with \( S_F \) such that \( F \) reliably causes \( S_F \), and if there is any other causal law connecting a property \( G \) with \( S_F \) such that \( G \) reliably causes \( S_F \), then that connection holds because the connection between \( F \) and \( S_F \) holds and not vice versa. In other words, \( S_F \) carries \( F \) as its information, and \( S_F \)’s carrying any other information asymmetrically depends on its carrying \( F \) as its information. Other representationalists (see, e.g., Dretske (1988)) agree with the information-theoretic element of Fodor’s view, but think content is narrowed down not by asymmetric dependence, but by proper function: \( S_F \) represents \( F \) if and only if it is the proper function of \( S_F \) to indicate the presence of \( F \)ness. Still other

\(^{39}\) For helpful overviews, see Speaks (2003: ch. 4) and Pitt (2013).
representationalists (e.g. Harman (1973)) think the effects of $S_F$ on the subject’s other mental states helps to determine $S_F$’s content.

Any representationalist account of belief will require, in addition to an account of content determination, an account of what makes a representation a belief (rather than a supposition or a desire or a hope or some other representational state). For most representationalists, what makes a representation a belief is the causal role that the representation plays. Thus, most representationalists are functionalists—though in principle one could take a different view of what makes a representation a belief (one could, for instance, posit some non-relational property of a representation that makes it a belief—e.g. a distinctive phenomenal character).

2.4 Interpretationism

Dennett (1978, 1987) and Davidson (1984) take views of belief that are meant to avoid any sort of robust ontological commitment to such entities as structured representations. Dennett allows that there may be such things, but contends that eliminativism about belief doesn’t follow from the non-existence of representations. What it is for a being to believe a proposition $p$ is for the being to be such that, from the “intentional stance,” it would be interpreted as believing $p$. We can take various stances toward a being to predict and explain its behavior, including most saliently the physical stance, the design stance, and the intentional stance. We can quite successfully predict and explain the behavior of rocks from the physical stance—interpreting their behavior by appeal to physical laws. When dealing with plants and simple animals, however, we switch to the design stance, because it is too difficult for us to predict their behavior in
terms of physical law, and relatively easy to predict their behavior in terms of their biological functions. But when dealing with certain complex organisms (and sophisticated machines), we do best to switch to the intentional stance and predict behavior in terms of intentional states like beliefs, desires, fears, and so on.

When we take the intentional stance, we employ “folk psychology” to predict and explain behavior. Folk psychology encompasses the generalizations that (virtually) everyone knows about the ways in which beliefs, desires, intentions, hopes, fears, and other intentional states influence behavior, as well as the ways in which sense experience impacts upon intentional states. The intentional stance will thus involve attributing to a being those beliefs that it ought to have given the information available to it and given its sensory apparatus, and also those combinations of belief and desire that best rationalize its behavior (i.e. explain its behavior as the pursuit of the objects of desire in the ways that it believes effective for securing those objects).

It is not altogether easy to make out just what ontological status Dennett takes beliefs to have. He denies that he is an eliminativist and is not entirely happy with the label “instrumentalist”; but he also rejects what he calls “industrial-strength Realism” about belief. Dennett affirms that folk psychological belief attribution often tracks real patterns in the behavior of a subject. But when two or more divergent folk psychological accounts of a subject’s behavior are equally good predictors of behavior, Dennett denies that there is an answer to the question of which account is correct. As best I can make out, Dennett’s view of belief is that (i) you believe that \( p \) if one of the (predictively) best

\[ \text{Or “knows” if the eliminativists are right.} \]

\[ \text{See Dennett (1991).} \]
folk psychological accounts of your (actual and counterfactual) behavior attributes to you the belief that \( p \), (ii) you do not believe that \( p \) if none of the best folk psychological accounts of your behavior attributes to you the belief that \( p \), and (iii) if, among the predictively best folk psychological accounts of your behavior, there is one that attributes belief to you and another that does not, then there is no fact of the matter about whether you believe that \( p \).\(^{42}\)

3. Against Realizer Functionalism

The account of belief to be defended in this chapter is neutral among most of the views just characterized. It is incompatible only with realizer functionalism. Something must be said to justify taking on a commitment to the falsity of realizer functionalism. To set the stage, it will be helpful to get one more view of belief on the table—one that has long since fallen out of favor with philosophers of mind.

The Identity Theory, pioneered by U.T. Place (1956), Herbert Feigl (1958), and J. J. C. Smart (1959), takes mental states such as belief to be identical to brain states.\(^{43}\) It is standard to distinguish Type Identity Theory from Token Identity Theory. The former asserts that every type of mental state is identical to some type of physical state (of the brain or nervous system), while the latter asserts that every mental state token is identical

---

\(^{42}\) I am grateful to Leopold Stubenberg for helpful discussion here. But it is no fault of his if I have not fully understood Dennett’s view.

\(^{43}\) Actually the pioneers of the Identity Theory initially claimed only that phenomenal states are identical to brain states. They held out hope for behavioristic reductions of cognitive states like belief. See Smart (2007: §1) for an account of the development of the Identity Theory.
to some physical state token. The difference between types and tokens can easily be illustrated in terms of pains. I tell the doctor that I had a pain after eating breakfast and then the same pain after eating lunch. I am reporting two tokens—two instances—of one pain type. Here we’ll be setting aside Token Identity Theory, since it does not provide an account of belief, nor does it significantly constrain one’s options for an account of belief.

Hilary Putnam (1967) presented what is widely considered a devastating objection to the Type Identity Theory: the Multiple Realizability Objection. If to believe that, say, erupting volcanoes are dangerous is to have some physical property $B_{\text{volcano}}$, then a creature believes that erupting volcanoes are dangerous if and only if it has the property $B_{\text{volcano}}$. But now suppose there are three creatures $s_1$, $s_2$, and $s_3$, such that $s_1$ and $s_2$ believe that erupting volcanoes are dangerous while $s_3$ does not. Then $B_{\text{volcano}}$ must be a physical property that $s_1$ and $s_2$ have but $s_3$ lacks. The trouble with this is that the belief that erupting volcanoes are dangerous would seem to be “multiply realizable” by physically diverse cognitive systems. But it takes little exercise of the imagination to conceive of alien creatures who believe that erupting volcanoes are dangerous despite sharing no neurophysiological properties with humans. And even if humans and, say, Alpha Centaurians share some very general neurophysiological properties, the problem remains that $B_{\text{volcano}}$ needs to be narrow enough not to be possessed by $s_3$. Not all humans have believed that erupting volcanoes are dangerous (especially those who have had no experience with volcanoes), so $B_{\text{volcano}}$ cannot be identified with any neurophysiological
properties that are so general as to be shared by all humans. The claim that there is a neurophysiological property shared by all and only those who believe erupting volcanoes are dangerous is thus an exceedingly bold empirical hypothesis, and very probably false. For this reason, the Type Identity Theory has largely been abandoned.

All the major views of belief that have been regarded as live options over the past half century are able to accommodate multiple realizability, except for realizer functionalism. Dispositionalism allows physiologically different creatures to have the same beliefs by having the same dispositions. Intepretationism accommodates multiple realizability by requiring physiologically different creatures only to be predictable by intentional schemes that attribute the same belief. On representationalism, physiologically different creatures share a belief if they each have a state with the same content (perhaps by having components with the same functions or the same asymmetric dependence relations) that has whatever characteristics are needed to make it a belief (on most versions, playing the same functional role). And role functionalism allows beliefs to be shared by physiologically different creatures whenever each of those creatures is in some state or other that plays the relevant functional role.

Not so for realizer functionalism, or at least the dominant version thereof. Realizer functionalists claim that a given mental state is (contingently) identical to whatever neurophysiological property happens to play the relevant causal role in the

---

44 A further problem with “going general” is that the belief that volcanoes are dangerous should dispose a subject to particular behaviors, such as avoiding (erupting) volcanoes or, if one is able, asserting that volcanoes are dangerous. Very general neurophysiological properties do not ground such specific dispositions.
actual world.\textsuperscript{45} If C-fiber firings play the pain role, then pain is C-fiber firings, though it could have been something else (just as the 43\textsuperscript{rd} American president could have Al Gore\textsuperscript{46}). The trouble is that there is such a thing as the neurophysiological property that plays the belief—that-\textit{p} role only if that role is played by one and the same neurophysiological property in all creatures who believe that \(p\). If belief that \(p\) (for any proposition \(p\)) is multiply realizable, then there is no such property. (Just as there is no such thing as the inventor of the calculus if two or more people came up with it simultaneously.)

David Lewis (1980) tries to rescue realizer functionalism by adding a contextualist twist to the view. “Pain” designates a neurophysiological property, but which neurophysiological property it designates depends on the conversational context. In some contexts it designates the neurophysiological property that plays the pain role in humans. In other contexts, it designates the neurophysiological property that plays the pain role in Martians. In still others, it’s the neurophysiological property that plays the pain role in octopi. And so on.

This is a clever solution, but it doesn’t work out in the end. Suppose Spock is a Vulcan and Kirk is a human and Vulcans share no (or only very general) neurophysiological properties with humans. McCoy might say, “Spock and Kirk are both in pain,” and what he says might be true. But there’s no shift in conversational context.

\textsuperscript{45} See Lewis (1980).

\textsuperscript{46} More carefully, it’s true on a \textit{de dicto} reading that the 43\textsuperscript{rd} American president could have been Al Gore. It’s presumably not true on a \textit{de re} reading; it’s not true of the 43\textsuperscript{rd} American president (George W. Bush) that he could have been Al Gore. If realizer functionalism is correct, and if C-fiber firings play the pain role, then pain is C-fiber firings even though it is true \textit{de dicto} that pain could have been something other than C-fiber firings.
mid-way through his utterance. McCoy is attributing the same property to Spock and to Kirk.

There is one more way out for realizer functionalism. I said above that on the dominant version of realizer functionalism a given mental state is (contingently) identical to whatever neurophysiological property happens to play the relevant causal role in the actual world. But realizer functionalism as such does not stipulate that the property in question must be a neurophysiological property. It is the combination of realizer functionalism with physicalism that runs afoul of multiple realizability. A realizer functionalist could adopt property dualism and say that the relevant functional role is played by some nonphysical property that humans can have in common with physiologically very different creatures—Martians, Vulcans, etc.

Functionalists have always emphasized that their view is neutral between physicalism and property dualism. But they have generally repudiated the property dualist option. Nonphysical properties are regarded as unscientific and unnecessary, and it is doubted that nonphysical properties could interact in the physical world the way mental states do. Pain is caused by nerve stimulation and causes avoidance behavior. Belief is caused by sensory stimulation, and it is a cause of verbal and non-verbal

---

47 Nor does the utterance seem on a par with “Obama and Putin are both president.” To utter this sentence is to misspeak, though it is easy to see how one should correct oneself: either “Obama and Putin are both presidents” or “Obama is president of his country, and Putin is president of his.” McCoy’s utterance of “Spock and Kirk are both in pain” is not liable to such correction.
behavior. For reasons like these, realizer functionalists have typically supposed the realizers to be physical properties.  

But there is another objection to realizer functionalism that applies to realizer functionalism as such, and not just to physicalist realizer functionalism. Lewis (1980) presents a characteristically memorable example of a case of what he calls “mad pain.” It is a case in which a madman feels intense pain that is caused, not by damage to his body, but by moderate exercise on an empty stomach, and that causes him, not to moan, wince, and engage in avoidance behavior, but to cross his legs and snap his fingers. He is in pain, but he is not in some first-order state that plays the pain role. This is meant to be a problem for role functionalism.

Realizer functionalism, as Lewis points out, can handle the case of mad pain. The thing that plays a role needn’t always play that role. The realizer functionalist can say that the mad pain case is a case in which the realizing property (C-fiber firings or whatever) is present, but is not playing its usual role (because of the presence or absence of other properties).

Now suppose we try to adapt Lewis’ mad pain case to the property of believing. Could there be mad belief? Eric Schwitzgebel raises this question in Schwitzgebel (2012), and his answer is that there cannot be mad belief. To motivate this answer, Schwitzgebel asks the reader to try imagining a case of mad belief. Imagine a subject who holds the belief that (most) pearls are white, but whose belief is caused in some very

48 I am not endorsing these reasons for rejecting property dualism. Indeed, I am sympathetic to property dualism about phenomenal states. But for reasons given below, I do not think dualist realizer functionalism is the correct account of belief.
atypical way and has very atypical effects. Perhaps the belief is caused by seeing the sun set over the Pacific. Perhaps it would be lost upon seeing the sun rise over the Atlantic. The belief also does not cause the subject to affirm, “Pearls are white,” either publicly or in inner speech; he would instead deny that pearls are white and affirm, “Pearls are red.” The belief also does not have the usual effects on his emotions. For example, he would not be surprised to see a forest green pearl. Nor would he employ the proposition that pearls are white in theoretical or practical reasoning. Upon learning that oysters make pearls, he would not infer that oysters make something white. He would not suggest pearls to a friend who was looking for jewelry to match a white dress. And the subject has no other dispositions that would suggest he believes that pearls are white. He believes that pearls are white, but this belief is not connected with his cognitive, conative, affective, or behavioral states or processes in any of the usual ways.

The exercise seems impossible to carry out. We can perhaps imagine a madman with the dispositional profile that Schwitzgebel describes. But we cannot imagine someone having that dispositional profile while believing that pearls are white. This is not a dissociation case where the subject has some properties that are characteristic of belief and others that are characteristic of non-belief. There is nothing belief-like about this subject. And it is quite implausible to suppose that a subject could believe while having literally no belief-like dispositions.

It is important to be clear about the claim that is being made here. Compare Schwitzgebel’s madman with Strawson’s (1994) Weather Watcher. The Weather Watchers are an alien species who are rooted to the surface of their planet and constitutionally incapable of any form of outward behavior, whether verbal or nonverbal,
but are capable of perception, thought, desire, and affect. It is not that the Weather
Watchers have masked dispositions to speak or act. Rather, their brains lack any
analogue of a motor cortex. In fact, they are not even capable of conceiving of the very
possibility of acting on the world. They hope; they fear; they observe; they are gladdened
by what they learn or disappointed by what they learn. That’s the extent of their activity.

Strawson proposed the Weather Watcher case to show that there could be a subject who
believes (and desires) while lacking all the typical behavioral dispositions. And while
some theorists will resist that claim, many will agree that behavioral dispositions are not
strictly necessary for belief. But, importantly, Strawson does not paint the Weather
Watchers as having mental lives stripped of all the cognitive, conative, and affective
manifestations of belief. We are permitted to imagine them being glad that it is raining,
or being worried that there will be erosion of the ground to which they are attached (a
worry rooted in an inference from the belief that it is raining), or being surprised to see
the water level in the lake falling (instead of rising, as the belief that it’s raining would
lead one to expect). Perhaps we are even allowed to imagine them affirming in inner
speech, “It is raining now!”

A case like Schwitzgebel’s madman strips away all the manifestations of belief.
The madman has no feelings characteristic of believing pearls are white; no reasoning
processes in which the proposition that pearls are white features in a belief-like way; no
affirmations of “Pearls are white,” whether public or internal; nothing at all suggestive of

49 Some theorists will worry that, since inner speech requires language and since the Weather
Watchers are incapable of interacting with each other, the Weather Watchers could not make internal
affirmations without private language, which is arguably impossible (see Wittgenstein (1953: §243)). But
Strawson allows that the Weather Watchers were once capable of behavior and became immobile later in
life. Their language could thus be a public language that was developed prior to immobilization.
the belief that pearls are white. There is thus a big difference between Schwitzgebel’s madman and Strawson’s Weather Watcher. And this difference makes a difference to our willingness to ascribe belief. It is hard to deny the possibility of Strawson’s Weather Watchers (believers who are wholly inactive);\textsuperscript{50} it is very hard to accept the possibility of Schwitzgebel’s madman (a believer who bears no mark of belief whatsoever).

The trouble for realizer functionalism about belief is that, if the realizers can be present without their roles (as happens in the case of mad pain), then it should be possible to have cases of mad belief. There should be cases where the belief realizer is present, but it for whatever reason fails to play the belief role. The impossibility of mad belief is a further problem for realizer functionalism. And it doesn’t help to go dualist. If belief is a nonphysical realizer of the belief role, then there ought to be cases where the nonphysical realizer of belief is present without playing its usual role. But such cases do not seem possible.

We’ll find further reason to reject realizer functionalism in the next section. But already the prospects for realizer functionalism look dim. Belief is multiply realizable and never mad. We need an account of belief that can accommodate those two features of belief. Among the live options discussed above, only realizer functionalism fails to accommodate these features of belief. I’ve already explained how the other accounts accommodate multiple realizability. And it’s easy to see how they rule out mad belief. If belief consists in dispositions, then there cannot be cases where belief is present without

\textsuperscript{50} Critics have tended instead to try to argue that the Weather Watchers have \textit{masked} dispositions to outward behavior. (See Williams (1998).) That move requires dispositions to be quite independent of capacities—you can be disposed to do things that you have no capacity to do. In §4.11 below, I give reasons for thinking dispositions and capacities are more closely connected.
those dispositions. If belief is a matter of having some property or other that plays the relevant functional role, then belief isn’t present when no property is playing the relevant functional role. Similarly if belief is a representation that plays the relevant functional role. And if believing is a matter of being so disposed as to be predictable by means of an intentional scheme that ascribes belief, then belief is absent whenever one has none of the dispositions that would lead to interpretation as a believer.

4. Dissociation Cases

Further reason for rejecting realizer functionalism can be gleaned from reflection on what I call “dissociation cases” (though, as we’ll see, dissociation cases have import for belief beyond their bearing on realizer functionalism). These are cases in which a subject has some dispositions that are characteristic of believing some proposition and other dispositions that are characteristic of not believing—or even disbelieving—that proposition. I call these cases “dissociation cases,” since they are situations in which one’s belief-typical dispositions are divided. Here are some of the most interesting dissociation cases from the philosophy of mind literature.

4.1 The Academic Nationalist

Christopher Peacocke (1999) gives a case in which a member of a hiring committee sincerely asserts and professes to believe that undergraduate degrees from countries other than her own are of a comparable standard to degrees from her own country. And she offers very good reasons for so believing. But her hiring decisions tell
a different story. When all else is equal, she decides in favor of candidates with undergraduate degrees from her own country over candidates with degrees from other countries. She is unaware of this tendency and would be surprised to discover such a pattern in her hiring decisions. We’ll call this person the “Academic Nationalist.”

4.2 The Aversive Racist

Many writers in the philosophy of mind and cognitive science (not to mention ethics, the philosophy of race, and social psychology) have been concerned with aversive racism. Aversive racism is to be distinguished from overt racism. An aversive racist does not use racist language, does not subscribe to racist ideology, and would positively affirm the equality (on average) of the races with respect to virtue, intelligence, and any other evaluative properties. But aversive racism is manifest (usually unnoticed by the subject) in the attitudes, feelings, and choices of the subject.

Suppose a professor has surveyed a fair amount of the literature on race and intelligence and defends in public discussion, as well as in print, the view that race makes no significant difference to intelligence, controlling for environmental factors. He also sincerely affirms that the students at his (racially diverse) university do not differ greatly with respect to environmental factors that could influence intelligence, such as nutrition, socioeconomic status, and quality of pre-secondary education. And he will sincerely affirm of his own students that, though some are brighter than others, the differences do

---


52 This case is modeled on Schwitzgebel’s (2010) case of “Juliet the implicit racist.”
not correlate with race. But this professed egalitarianism is not borne out in his treatment of and reactions to his students. He tends to pose easier questions to students of some races than to students of other races. He is more surprised (pleasantly so) when students of some races make clever or insightful comments than when students of other races do. When he wonders which student wrote a particularly excellent essay that he is reading (he grades them blind), students of some races come to mind more readily than students of other races. We’ll call this individual the “Aversive Racist.”

4.3 The Half-Rememberer

Eric Schwitzgebel (2001) presents a case in which a person undergoes a slow process of forgetting the name of a dorm-mate. At first she can easily recall the name. A decade later—at age 32—she could recall the name with difficulty, but only in the right frame of mind, in the right circumstances, and with a bit of luck. A couple more decades on, she can under no circumstances recall the name. Suppose the dorm-mate’s name was “Liz.” It is unproblematic to say of an early time-slice of the subject that she believes the dorm-mate’s name was “Liz.” And it is clear that we should not ascribe this belief to the latest time-slices of the subject. But it is quite unclear at what point in the gradual process of forgetting we should stop ascribing belief. At some points it will seem like a stretch to say that the subject still believes the dorm-mate’s name was “Liz”; but it also won’t seem quite right to deny that the subject believes the dorm-mate’s name is “Liz.” Let’s give a name to one of those time-slices: the “Half-Rememberer.”
4.4 The Sunday Theist

Schwitzgebel (2001) gives another case in which a person’s religious outlook varies with the circumstances. The idea of God seems silly to this person when he is with his atheist buddies at work or when he encounters some overly zealous believers who recount the many acts of God in their lives over the past 24 hours. But at other times he feels sure that God must be there, especially while singing at church or walking through a magnificent forest or at the birth of each of his children. We’ll call this person the “Sunday Theist.”

4.5 The Hesitant Skywalker

Tamar Gendler (2008a) presents a case with thousands of actual instances every year: a person who experiences vertigo and terror upon stepping out over the Grand Canyon on the glass-floored Skywalk. This person asserts that the walkway is perfectly safe. Indeed, her choice to go out on it, or \((a \text{ fortiori})\) to allow her children on it, demonstrates a firm conviction in the safety of the structure. But her hesitancy, her timid steps, her firm grip on the rails, her gasps and cursing, and her perspiration and vertigo are characteristic of doubt about the Skywalk’s safety. We’ll dub this person the “Hesitant Skywalker.”

4.6 The Contagion Avoider

Gendler (2008a) also presents cases from psychological studies of choices that seem to manifest belief in magical contagion—the contamination of an object that looks like something disgusting or that has been in contact with something or someone strongly
disliked by the subject. A subject might be given a very tasty block of fudge and then offered more of the same fudge, but in the shape of dog feces. Subjects often refuse the offer, even while claiming to know that the feces-shaped fudge is harmless. Let us call such a person the “Contagion Avoider.”

4.7 The Shrieking Movie-Goer

Gendler (2008a) presents another case whose instances are quite familiar: viewers of horror films who display fear behaviors. Suppose a subject views a 3D horror film in which characters who watch a certain video are killed by a ghost that emerges from the television screen. The subject becomes totally engrossed in the film. She is perspiring; her heart rate is elevated; she is clutching the arms of her seat. In the final scene, there is a close-up of the ghost, and suddenly the 3D effects make it appear that the ghost is stepping out of the screen into the cinema. The subject lets out a terrified shriek and begins to cower behind the seat in front of her. Call this subject the “Shrieking Movie-Goer.”

4.8 The Inflexible Reorganizer

Aaron Zimmerman (2007) makes use of the quotidian case of someone who initially places the kitchen trashcan under the sink and later moves it next to the stove, but continues for months thereafter to start for the sink whenever there is an item to throw away. This person can easily and accurately tell you where the trash can is located, and

53 As in the Japanese horror film Ringu.
when he does walk to the sink with trash, he usually catches himself before opening the cabinet under the sink. But he regularly takes his trash toward the sink before catching himself, especially when his mind is occupied with other matters. We’ll call this subject the “Inflexible Reorganizer.”

4.9 The Compulsive Salt-Dropper

Brie Gertler (2011) presents a case in which a subject has been raised to believe that spilling salt brings bad luck that can only be averted by dropping a pinch of salt over one’s shoulder. As an adult this subject has repudiated this belief as mere superstition with no basis in fact. Still, though, whenever she spills some salt, she experiences a sense of doom and finds herself compelled to drop a pinch of salt over her shoulder. Let us call this subject the “Compulsive Salt-Dropper.”

4.10 The Weather Watcher

As mentioned above, Galen Strawson (1994) asks us to imagine a species of intelligent extraterrestrials who are rooted to the ground and constitutionally incapable of any form of outward behavior, whether verbal or nonverbal, but are capable of perception, thought, desire, and affect. They can be surprised, gladdened, or troubled by what they perceive. They can perhaps internally affirm propositions. But they are incapable of any outward manifestations of belief. We’ll follow Strawson in calling such a subject a “Weather Watcher.”
4.11 Lessons from Dissociation Cases

Philosophers of mind have had a variety of agendas in presenting dissociation cases. Peacocke uses the Academic Nationalist merely to illustrate a qualification to his view that self-ascription of belief tracks the property of belief.\(^{54}\) Zimmerman uses the Inflexible Reorganizer to argue for a particular kind of account of the concept of belief. Gertler uses the Compulsive Salt-Dropper to oppose a particular kind of account of belief, as well as to oppose the idea (stemming from Evans (1982)) that belief is “transparent” in the sense that one knows whether one believes that \(p\) by considering whether \(p\). Strawson uses the Weather Watcher case to oppose behaviorism about belief and desire. Schwitzgebel and Gendler use their dissociation cases to introduce new psychological categories. Schwitzgebel introduces “in-between believing”—a borderline case that is neither a clear case of belief nor a clear case of non-belief.\(^{55}\) Gendler introduces “alief”—an innate or habitual disposition toward an automatic affective and/or behavioral response to particular mental images.\(^{56}\)

I have a different agenda. I think reflection on dissociation cases can tell us some important things about the shape that our account of belief should take. There are two lessons in particular that I want to draw from dissociation cases.

\(^{54}\) The qualification is “when all is working properly.” Not all is working properly in the Academic Nationalist case and similar cases.

\(^{55}\) Schwitzgebel favors a many-valued logic for vague predicates, but he means for in-between believing to be understood in a way that is neutral between such approaches to vagueness and classical (two-valued) approaches. He sometimes describes a subject as having in-between belief when it is neither “determinately” the case that the subject believes nor “determinately” the case that the subject does not believe. But while some writers have used “determinately” and “indeterminately” in a theory-neutral way, the expression “indeterminately the case” can easily suggest either a truth-value gap or a non-classical truth-value (such as a degree of truth). Here and below I stick to more obviously neutral terminology and speak of “borderline” cases and “clear” cases.

\(^{56}\) For definition see especially Gendler (2008b: 557-58).
First, dissociation cases give us further reason to reject realizer functionalism. If realizer functionalism were true, then whether a dissociation case is a case of belief depends ultimately on whether the property that realizes the belief role is present. But then all of the dissociation cases described above are described at a superficial level. The crucial bit of information is missing from each of them: whether or not the realizer for belief is present. There could be an Academic Nationalist who believes that foreign and domestic degrees are of comparable merit (i.e. who possesses the realizer for that belief), and there could be an Academic Nationalist who does not so believe. There could be a Hesitant Skywalker who believes the platform is safe, and there could be one who doesn’t. And so on. At best the information in the description of the cases can provide indications as to whether the realizer is present. But there is no determinate answer to the question whether any of these cases is a genuine case of belief; each case is underdescribed for failing to say whether the neurophysiological realizer is present.

That is not how it seems, though. While a number of these cases are hard cases (some harder than others), they do not seem to be hard because of a lack of information. They seem hard because the information present pulls in two directions when it comes to ascribing belief. And the pull does not feel like an evidential pull. It doesn’t seem right to characterize our perplexity over the Aversive Racist by saying that his affirmations provide evidence for belief in the equality of the races while his affective dispositions provide evidence against that belief. His dissociated dispositions do not seem like conflicting indications of an underlying reality. Those dispositions are the reality. Our
perplexity is over how to classify that reality. Ours seems to be a semantic problem, not an evidential problem.\(^{57}\)

The problem feels much like the one we are faced with when asked to classify borderline cases of baldness, borderline shades of color, borderline cases of virtue, and the like. You can compare the aqua-colored sample to as many other color samples as you like; the task of deciding whether it is blue remains bewildering. You can learn all there is to know about a person’s affective and behavioral tendencies in risky situations; you may still find it difficult to decide whether to classify her as courageous.

So the first lesson of dissociation cases is that the puzzlement they engender is not of the sort that realizer functionalism would predict. They do not seem to offer epistemic resistance to efforts at classification. They seem instead to offer semantic resistance. We thus have one more reason to reject realizer functionalism.

The second lesson concerns the question of what I will call “strictness” versus “leniency” in an account of belief. Suppose we have a multi-track dispositionalism according to which, for state types \(\phi_1 \ldots \phi_n\) and circumstance types \(X_1 \ldots X_n\), believing a proposition \(p\) is a matter of being disposed to \(\phi_1\) in \(X_1\), being disposed to \(\phi_2\) in \(X_2\),…, and being disposed to \(\phi_n\) in \(X_n\). There are two options for such an account. On a strict version, believing a proposition requires having all \(n\) of these dispositions. On a lenient version, believing a proposition only requires having enough of these dispositions.

\(^{57}\) Of course, in a real-life dissociation case, there could well be further details that could help us make the classification. But it seems quite possible to have cases where we could learn everything there is to know about the subject and still find classification difficult because the subject is so deeply dissociated.
Suppose we meet a Martian who seems in most respects as though he believes that erupting volcanoes are dangerous. He says so (in Martianese); he avoids erupting volcanoes; he desires that his friends stay away from erupting volcanoes; and so on. But he has one stray disposition that is out of sync with the others—perhaps he’s not disposed to believe propositions that are obvious consequences of the proposition that erupting volcanoes are dangerous, even upon considering those propositions (e.g. that erupting volcanoes are either dangerous or beautiful (or both), that some things are dangerous, that everything that’s harmless is not an erupting volcano, etc.). On a strict, multi-track dispositionalism, our Martian will not qualify as believing that erupting volcanoes are dangerous. On a lenient, multi-track dispositionalism, he will qualify; he doesn’t have all the relevant dispositions, but he has enough.

The other views of belief discussed above also admit of a strict/lenient distinction. A strict functionalism will require an internal state to play the whole functional role to qualify as a belief in a particular proposition; a lenient functionalism will just require that enough of the functional role be played. The same goes for functionalist representationalism—a strict version requires a representation to play the whole functional role to be a belief, while a lenient version only requires a representation to play enough of the role.

Dennett’s interpretationism, as I understand it, is built for leniency. A subject’s behavior needn’t be (even nearly) perfectly predictable through belief attribution for the subject to qualify as believing. One could in principle adopt a strict interpretationism,

---

58 Lewis (1972: 256), for instance, promotes a lenient functionalism that defines mental states by means of “clusters” of (folk) psychological platitudes.
perhaps one that identifies a circumscribed class of departures from predictability (as when the relevant dispositions are masked), and requires predictable behavior in all other circumstances in order for belief to be present. But Dennett himself leaves room for unpredictable “noise” in the patterns that the intentional stance enables us to track.59

Dissociation cases can play a central role in an argument for adopting a lenient, rather than a strict, account of belief. Let us focus for the moment on dispositionalism, since it is relatively simple. What I am now going to argue about dispositionalism will carry over to strict and lenient versions of the other views on belief.

My argument is an inference to the best explanation. Certain phenomena are much more easily explained on lenient than on strict dispositionalism. To begin with, despite assiduous efforts by many brilliant minds over many years, no theorist has been able to identify a set of dispositions that are at all widely recognized to be necessary and sufficient for belief. Few theorists have been able to convince even themselves of their success at this task; none have convinced more than a handful of others.60

In fact, theorists have been hard pressed to identify even one disposition that is strictly necessary for belief. Consider, for example, the disposition that Assertive Dispositionalism identifies with belief: the disposition to assert $p$ when one’s sole aim is to assert the truth concerning whether $p$. This disposition requires linguistic ability, and it is doubtful that beliefs are restricted to beings with linguistic ability.

Now, an Assertive Dispositionalist might hope to handle the case of nonlinguistic (or pre-linguistic) subjects by including linguistic ability in the circumstance of


manifestation for the disposition with which belief is identified. The idea is that a subject believes \( p \) if and only if the subject is disposed to assert that \( p \) when the subject has the ability to assert that \( p \) and has the sole aim of asserting the truth concerning \( p \). But there are at least two problems with this proposal. First, we typically don’t ascribe dispositions to creatures that lack the abilities required to manifest them. Wittgenstein said that if a lion could speak we wouldn’t understand it; he did not say that a lion is disposed to speak incomprehensibly (in circumstances where it is able to speak). Second, one might well think it possible for there to be a believer that essentially lacks linguistic ability. It is very hard to buy the claim that such a creature is nevertheless disposed to assert its beliefs (in the counterpossible circumstance where it is able).

This kind of problem generalizes. Just about any disposition that is characteristic of belief will require some kind of capacity that a believer could be without. It is for this reason very difficult to find any doxastic dispositions that are strictly necessary for belief.

This situation is just what lenient dispositionalism would predict. On lenient dispositionalism, a believer need only have enough of the doxastic dispositions. We shouldn’t expect to find any dispositions that are strictly necessary for belief, because there may well be no disposition that is strictly necessary for belief. And we certainly shouldn’t expect to find any set of dispositions that are necessary and jointly sufficient for belief.

The strict dispositionalist has to tell a different, much less straightforward story. Some doxastic dispositions really are strictly necessary for belief. Our inability to identify these dispositions is due either to ineptness or confusion or both. And appeals to ineptness and confusion must be handled with care in this case. For we are somehow able
to identify at least some instances of belief. The conditions for belief must not be totally inaccessible to us, since we are able to use them for categorization. The strict dispositionalist must account for our inability to identify the conditions for belief while accommodating the sort of access we have to the dispositions that constitute belief in virtue of which we are capable of categorization.

Fumerton (1983) provides the kind of theory that is needed (though not specifically for the concept of belief). Fumerton employs the distinction between *knowing that* and *knowing how*. One may know how to conjugate verbs in French without knowing that, say, the second person plural of an -er verb (e.g. *parler*) takes an -*ez* ending in the present tense (e.g. *parlez*). Following a rule is different from formulating a rule, and someone who is adept at the former may be quite inept at the latter. Fumerton goes on to argue that concept application is relevantly like rule-following, whereas concept analysis is relevantly like rule-formulating.

Some theorists will find Fumerton’s story quite plausible. But the knowing how/knowing that distinction only buys us so much. Language users have succeeded in formulating the grammatical rules of their languages. If in our classificatory practice we are sensitive to the dispositions that are necessary and sufficient for application of the concept of belief, our remarkable lack of success at identifying those dispositions still requires explanation. Fumerton’s story provides little more than a gesture at a hypothesis, whereas lenient dispositionalism has a straightforward explanation for the phenomena in question.

And dissociation cases make further trouble for a Fumerton-style defense of strict dispositionalism. If our access to the conditions for belief consists in abilities to apply
them, even if not to identify them, then it is mysterious why we should have such trouble applying the concept of belief in (some) dissociation cases. Suppose strict dispositionalism is true, and let $\phi_1, \ldots, \phi_n$ be manifestations and $X_1, \ldots, X_n$ be stimulus conditions such that, for some proposition $p$, you believe that $p$ if and only if you have the disposition to $\phi_i$ in $X_i$, for all $i$ ($1 \leq i \leq n$). Our ability to apply the concept of believing that $p$ would then consist in (a) the ability to recognize the disposition to $\phi_i$ in $X_i$, the disposition to $\phi_2$ in $X_2$,…, and the disposition to $\phi_i$ in $X_n$, and (b) the tendency to categorize subjects as believing $p$ when we recognize those dispositions in the subject. Now, a given dissociation case either will or won’t be a case in which the subject has the disposition to $\phi_1$ in $X_1$, the disposition to $\phi_2$ in $X_2$,…, and the disposition to $\phi_i$ in $X_n$. If the subject has those dispositions, then it is to be expected that we would categorize the subject as believing $p$. If the subject does not have all those dispositions, then it is to be expected that we would categorizing the subject as not believing $p$. So at least on the most straightforward extension of the Fumerton-style story to cases like the Aversive Racist or the Academic Nationalist or the Compulsive Salt-Dropper, these cases should not be any harder for us than non-dissociation cases. That they are hard cases tells against a Fumerton-style defense.

Of course, it is always possible to augment the story to account for our difficulties with dissociation cases. But any such augmentation will leave us with an even less

\*\*\*\*\*\*

61 One might, for instance, hold that we apply the concept of belief by means of a set of heuristics, each heuristic focusing on only some of the dispositions relevant to belief. (If the subject has dispositions, $D_1$, $D_2$, and $D_3$, ascribe belief.) These heuristics might give conflicting verdicts in dissociation cases. A hard question for this proposal, though, is how a heuristic that focuses on only some of the dispositions that are constitutive of belief allows us to apply the concept of belief, rather than some concept that only partially overlaps belief.
straightforward account. Strict dispositionalism requires a lot of maneuvering. Lenient dispositionalism accommodates the phenomena much more elegantly and economically.

A similar argument applies to other accounts of belief. Our inability to identify a necessary and sufficient causal role and our difficulties classifying dissociation cases tell against a strict role functionalism, representationalism, or interpretationism, and in favor of lenient versions of these views.

The second lesson of the dissociation cases, then, is that we should adopt a lenient account of belief. Believing a proposition is a matter of having enough of the relevant properties—whether having enough of the relevant dispositions, or having a first-order state that plays enough of the relevant causal role, etc. But there are sure to be borderline cases where it is unclear whether enough of the relevant properties are possessed. No amount of fleshing out of the cases will settle the question, just as no amount of fleshing out of a borderline case of baldness or blueness or courage will settle the question whether the object is bald, blue, or courageous. On a lenient view, belief is vague.62

5. The Belief Role

In this dissertation I will not be plumping for dispositionalism or role functionalism or representationalism or interpretationism over against the others. I have

62 I am thus coming out in agreement with Schwitzgebel’s (2001, 2002) take on dissociation cases. As noted above, though, Schwitzgebel favors a many-valued logic for vague predicates, and I am not endorsing that view. I agree that there are cases of “in-between believing” (Schwitzgebel’s term) only in the sense that there are borderline cases of belief, where no amount of inquiry will allow us to settle the question whether the subject believes. (It should be noted that Schwitzgebel means for his take on dissociation cases to be available to those like myself who do not endorse his view of vagueness, and he does not define in-between believing in terms of truth value gaps.)
argued that we should reject realizer functionalism and that, whatever account of belief we adopt, it should be lenient rather than strict. Belief is not some hidden neurophysiological (or, for that matter, nonphysical) property that underlies the various doxastic dispositions. And no set of dispositions (or causal powers and liabilities) is both necessary and sufficient for belief; believing a proposition is a matter of having *enough* of the relevant dispositions (or being in a first-order state with *enough* of the relevant causal powers and liabilities). But evaluating the Threshold View is going to require us to have some idea what are the relevant dispositions (or powers and liabilities). To that question we now turn.

5.1 The Folk-Psychological Belief Role

The currently most popular answer to this question is that the dispositions having enough of which qualifies you as believing *p* include *all* the dispositions that folk psychology predicts you will have if you believe *p*. The underlying view is that the concept of belief is a theoretical concept, but of a *folk* theory, since (virtually) everyone has the concept of belief.63 A theoretical concept is defined by its role in the theory, and its role encompasses every appearance of the concept in the theory. In the case of the concept of belief, that includes everything belief is typically caused by, everything it typically causes, and all its species, according to the theory. On a lenient version of this “commonsense functionalism,” you believe that *p* if and only if you are in some first-

63 Cf. Audi (1972: 43) and Lewis (1972: 256).
order state that plays enough of the role (enough of the *whole* role) assigned to belief by folk psychology.

But what is “folk psychology”? Stich and Nichols (2003: §2) distinguish two conceptions of folk psychology. First, commonsense functionalists typically follow Lewis (1972) in understanding folk psychology to comprise all the platitudes that everyone “knows” (i.e. the things we all take everyone to know and take everyone to know that everyone knows, etc.) about mental states. Folk psychology is the body of *common knowledge* about the mental. Second, writers on “mindreading” (knowing the mental states of others) understand folk psychology as a theory by which we attribute mental states to each other and explain and predict each other’s behavior in terms of attributed mental states. Folk psychology is the theory by means of which we mindread.

Folk psychology as common knowledge is arguably a proper subpart of folk psychology as mindreading theory. If we mindread by means of a theory, there are sure to be elements of that theory that we don’t take everyone to know. But any item of common knowledge about the mental seems usable, at least indirectly, for mindreading.

But even if the theory by which we mindread (assuming we do mindread by means of a theory) does significantly outstrip common knowledge about the mental, the differences between the two will not be important for our purposes here. I am not aiming

64 See Gopnik and Meltzoff (1997).

65 Dennett’s interpretationism is sometimes represented as a form of functionalism. But it is worth noting that Dennet’s interpretationism is rooted in the mindreading-theory conception of folk psychology, whereas most functionalists employ the common-knowledge conception.

66 A version of this argument appears in Stich and Nichols (2003: §2).
here to pin down precisely which dispositions are relevant to belief. My main concern is to argue for a lenient view of belief on which the array of relevant dispositions is relatively rich, as opposed to a bare-bones view on which very few dispositions are relevant. But common knowledge about belief is enough to give us a rather rich set of doxastic dispositions.

A number of philosophers have provided partial enumerations of the dispositions that we all know a subject will have when the subject believes a proposition. Robert Audi (1972: 44-45) provides the following list (“x” ranges over persons, “p” ranges over propositions, and “xBp” abbreviates “x believes that p”).

1. If xBp, then if x discovers or suddenly comes to believe that p is false, or if x discovers or suddenly comes to believe either (a) that someone whose judgment concerning p (or related subjects) he respects, has thoughtfully denied p, or (b) that there is (what x takes to be) substantial evidence against p, x tends to be upset or worried or surprised, or led to reconsider p or related propositions, or some combination of these conditions tends to occur.

2. If xBp, then x tends to believe (a) propositions which he believes are conceptually necessary consequences of p, and (b) to a lesser extent, propositions which he believes follow from p with fairly high (greater than .50) probability.

3. xBp if and only if: under favorable conditions, x tends (a) to invoke p in justifying his beliefs, his reasoning, and his actions, and (b) to reason in accordance with p in his planning of strategies and activities.

My numbering differs from Audi’s, and I have listed only the items of his that concern the effects of belief (not the causes of belief, nor mere indicators of belief). Since dispositionalism concerns only the effects of belief, the items of common knowledge concerning the causes of belief will not be common ground for dispositionalists, functionalists, and the rest.
[(4)] xBp if and only if: under favorable conditions, x tends to say, assert, insist, affirm, avow, or the like, that p.

[(5)] xBp if and only if: under favorable conditions, x tends to perform actions such that if an explanation of one or more of these actions were requested, it would be reasonable to invoke x’s believing that p as an essential part of the explanation.

Many other philosophers give variants on (1)-(5). A few add something in the vicinity of

[(6)] If S believes that p, and entertains the proposition that she believes that p, she will typically come to believe that she believes that p without the aid of conscious inference. [Zimmerman 2007: 65].

I won’t attempt here to give a list of doxastic dispositions that is much more comprehensive than other writers’; but it would be nice to have something a bit more systematic. Before developing a more systematic list, though, one feature of the items above requires comment.

5.2 Favorable Conditions

(3), (4), and (5) explicitly (and, one might argue, (1), (2), and (6) implicitly) employ an “under favorable conditions” clause. Let’s focus on (4) for the sake of illustration. Believers aren’t constantly asserting their beliefs, and they don’t assert the things they believe under just any conditions. There are specific conditions under which believers tend to assert what they believe. Believers assert their beliefs when the conditions are “favorable.”
It is common to include something like an “under favorable conditions” clause in disposition ascriptions. A crystal chalice is disposed to break when dropped, not under all conditions, but under favorable conditions. If it is packed well in Styrofoam, it will not break. If it is dropped on a cushion, it will not break. If it is dropped on concrete, but the concrete is accelerating downward at almost 9.8 m/s\(^2\), it will not break. There is a limited range of favorable conditions.

But as Audi (1972: 45) acknowledges, the addition of an “under favorable conditions” clause to the disposition ascription raises the worry that the disposition ascription is empty in virtue of having an infinitely flexible escape clause. Suppose I want people to think I can bench press more than I can, and I am willing to lie about the matter. Then I am disposed under favorable conditions to assert that I can bench 200 pounds. But I know very well that the assertion isn’t true. The disposition counts not at all toward my believing that I can bench 200 pounds.

Or suppose I don’t care what people think about what I can bench press. But I could come to have the desire for people to think I can bench 200 pounds, and I could lose my inhibition against lying. Am I not then disposed under favorable conditions (viz. upon acquiring the relevant desire and losing the relevant inhibition) to assert that I can bench 200 pounds? Indeed, isn’t everyone disposed under favorable conditions to assert that they can bench 200 pounds? The favorable conditions will be different for different people, but isn’t it true for everyone that there are conditions that are favorable for their asserting that they can bench 200 pounds?

It begins to look as though, if the statements of the relevant doxastic dispositions include an “under favorable conditions” clause, then everyone will count as having those
dispositions for every proposition. But then everyone will count as believing everything. That’s clearly an unacceptable result.

One might hope to replace the “under favorable conditions” clause in the items above with an explicit list of favorable conditions. Thus, for example,

\[(4') \text{ If } s \text{ believes that } p, \text{ then } s \text{ is disposed, when asked whether } p \text{ by a trusted friend and in a mood to answer sincerely and unafraid that the answer will mislead or offend or spoil a surprise, to say, assert, insist, affirm, avow or the like that } p.\]

That’s a nice start, but it comes nowhere close to covering all the conditions that can make a difference to whether a believer will verbally express his belief. The believer could be convinced that it’s better for the hearer not to know that \( p \). He could be worried about being overheard by others. He could get distracted before making the assertion. His mouth could be full of taffy. He could have a heart attack or a seizure. He could be trampled by an elephant. He could be struck dumb by an angel. The possible exceptions seem limitless.

We mere mortals cannot formulate an explicit list of conditions to replace the “under favorable conditions” clause. But do we need to be able to do that in order to refer to a particular disposition? Philosophers have generally thought not, though when they have tried to explain why not, they have given different and conflicting justifications.
Troy Cross (2005) has offered a contextualist justification. In a given context in which a disposition is ascribed, a set of “background conditions” is presupposed. But, as Cross sees it, presupposing a set of background conditions doesn’t require being able to spell out the background conditions. Cross writes,

That is the very nature of contextual presupposition and what makes it so useful. If we had always to be able to specify our presupposed background conditions exhaustively and in non-circular terms, ordinary communication would be impossible. (Cross 2005: 325)

Indeed it would—even with communication that is not directly about dispositions. The department chair says, “The meeting will be in room 107 at noon tomorrow.” But he is presupposing that the meeting will in fact occur, and thus taking for granted that the meeting won’t be prevented by a natural disaster or a terrorist attack or an ebola outbreak or a prank that renders the room unusable or…. He cannot possibly specify all the conditions under which his statement will fail to hold, but communication nonetheless succeeds because we have a grasp of the presuppositions at work in the conversational context. We know where to be at noon tomorrow, and if we learn of one of the unstated background conditions that it is unsatisfied, we won’t expect the meeting to occur in room 107 at noon tomorrow.

Manley and Wasserman (2007) offer a different justification for thinking we needn’t find a replacement for the “under favorable conditions” clause in disposition ascriptions. They actually think the “under favorable conditions” clause is dispensable.

---

68 See also Mumford (1998) and Manley and Hawthorne (2005).
When for some \( s, \phi, \) and \( X, \) I utter "\( s \) is disposed to \( \phi \) in \( X, \)" what I say is true if and only if, for *enough* sets of background conditions, \( s \) would \( \phi \) if \( X \) were the case.\(^{69}\) We needn’t specify a particular set of background conditions, and conversational context needn’t specify a particular set of background conditions. There is no favoritism; all possible sets of background conditions are relevant.

A third approach gives background conditions no role at all in disposition ascriptions. Martin and Heil (1998) conceive of water-solubility, for example, as simply the disposition to dissolve in water—not the disposition to dissolve in water under particular conditions. But they do not (like Manley and Wasserman) think of a disposition as a matter of being such that the manifestation would be triggered by its stimulus condition under enough sets of background conditions. They think of dispositions, rather, as *defeasible tendencies*, which can be modeled on *defeasible reasons*. Indeed, Martin and Heil propose a link between dispositions and defeasible reasons: that \( s \) is in \( X \) and \( s \) is disposed to \( \phi \) in \( X \) is a *prima facie* reason to believe that \( s \) will \( \phi \). That reason can be defeated; it is defeated when one has reason to think something *intervenes* to prevent the disposition’s manifestation. When that happens we can also say that the disposition is “defeated.” It is only when a disposition is undefeated that it is manifested.\(^{70,71}\)

---

\(^{69}\) What proportion counts as “enough” will vary from one conversational context to another. So there is also a contextualist element in Manley and Wasserman’s view, though it is not the element that Cross envisions.

\(^{70}\) As a number of writers have noted, most familiar dispositions are not “surefire”—they can fail to be manifested even when there is no intervention to prevent their manifestation. To borrow an example from Cartwright (2007), an irascible person needn’t explode in all irritating circumstances, even when there is nothing to restrain him. For many dispositions, then, the absence of defeat does not entail the manifestation of the disposition.
I will not be promoting any of these approaches to favorable conditions over other approaches. Here I want to make three points. First, there are many ways one might account for our ability to refer to a particular disposition without providing an explicit list of conditions that are favorable to manifestation. We’ve seen three ways just now, and there are a number of others. And although worries have been raised about most every proposal (as is typical in philosophy!), there is as yet little reason to think the whole project is doomed.

Second, we are all (or virtually all) committed to accommodating the informativeness of disposition ascriptions that do not explicitly specify all the conditions in which the disposition would be manifested. Disposition ascriptions are ubiquitous in everyday discourse and in scientific literature, and their usefulness is hard to overstate. A pathology textbook can make a great difference to people’s health outcomes by conveying knowledge of the dispositions of various pathogens and the dispositions of various drugs. An architectural engineering textbook can promote safety by providing information about the dispositions of various construction materials, methods, and

---

71 Presumably (as with reasons) one way for a disposition to be undefeated is for it to be subject to an intervention that is itself defeated. That is why I did not say, “It is only when there is no intervention that a disposition is manifested.”


73 To illustrate: one might well think the contextualist owes us an account of the mechanism by which context selects a particular set of background conditions, but some of the most obvious candidates, such as conversational “salience,” are subject to difficult objections. Choi (2011) contends that we are inclined to ascribe dispositions even when interfering factors are conversationally salient. (Asked the young wizard, “Why must we cast protective spells on the crystal chalice whenever it’s about to be dropped?” Replied the old wizard, “Because it is very precious and very fragile.”) That is an important objection to one proposal for a condition-determining mechanism, and it might be applicable to some other proposals, as well. But it does not show that an appropriate mechanism couldn’t be found.

74 I am grateful to Kenny Boyce for helpful discussion here.
structures. A lost hiker can be helped to survive by a pocket wilderness guide that
describes the dispositions of the local plants and animals. In none of these cases are the
background conditions for a disposition’s manifestation described in great detail. Yet a
great deal of useful information is conveyed.

Taken at face value, these phenomena show that textbooks and guidebooks confer
knowledge of the dispositions that various objects possess, even without providing
detailed specification of the conditions under which those dispositions are manifested.
Perhaps that is because background conditions are supplied by some part of the world
(the instructional context, perhaps). Or perhaps it is because a disposition isn’t tied to
any particular set of background conditions. In any case, we somehow or other refer to
dispositions without detailed specification of the conditions in which they are manifested.
I will assume in what follows that this is the case.75

Third, even if we assume that we can refer to particular dispositions by means of
short and sweet disposition descriptions, we need not take just any disposition

75 Some philosophers may take a more skeptical position. They might think a particular
disposition can be picked out only by a disposition ascription that makes the background conditions for
manifestation fully explicit, in which case a short and sweet disposition ascription fails to refer to any
particular disposition. They might explain the usefulness of disposition ascriptions as follows. For any
short and sweet disposition ascription, there will be many “extensions” of that ascription—disposition
ascriptions that supplement the manifestation condition in the short and sweet ascription with a long list of
background conditions. We don’t manage to ascribe dispositions that the objects around us actually have
by means of short and sweet disposition ascriptions. The dispositions of actual objects could only be
picked out by certain extensions of those short and sweet ascriptions. But if the background conditions in
such an extension almost always hold, then someone who acts upon the short and sweet disposition
ascription will navigate the world almost just as well as someone who acts upon an extension that picks out
a disposition that the object in question actually has.

I do not know how to settle the question whether the face-value take or the more skeptical take on
dispositions is correct. If the more skeptical take were correct, it might (for all I can tell) have unhappy
consequences for my argument. It would certainly complicate matters. But I am going to bracket this issue
and proceed on the assumption that our disposition talk is to be taken at face value. Those who reject this
assumption are invited to explore how much of the argument to come they can accept without this
assumption.
description, no matter how short, to be specific enough to refer to a particular disposition. There remains a question how specific we need to be with the manifestation condition in order to pick out particular dispositions that the objects around us have. Consider these two putative disposition ascriptions:

(A) Penicillin is disposed to produce anaphylaxis when ingested.

(B) Penicillin is disposed to produce anaphylaxis when ingested by someone with a penicillin allergy.

(A) seems incorrect. Ingestion is too broad a circumstance for the purpose of specifying the anaphylactic disposition that penicillin has. (B) specifies the manifestation condition more narrowly and seems correct.

I have no developed theory about the level of specificity that is needed to successfully pick out dispositions that the objects around us actually possess. But the example just presented suggests the following rule of thumb: when attributing a disposition to $\phi$ to an object $s$, specify a manifestation condition $X$ that is particular enough that $s$ is likely to $\phi$ when in $X$. Penicillin isn’t likely to produce anaphylaxis when ingested. But penicillin is likely to produce anaphylaxis when ingested by a person with a penicillin allergy. I am offering this only as a rule of thumb and will not try to say much about the “likelihood” involved in the rule. I think actual frequencies can play the role, and I suspect hypothetical frequencies could do so, as well. But I will not be developing an account here.
Consider again (4) in light of the rule just given:

\[(4) \quad xBp \text{ if and only if: under favorable conditions, } x \text{ tends to say, assert, insist, affirm, avow, or the like, that } p.\]

We need to replace “under favorable conditions” here with some further specification of the manifestation conditions of this disposition. Someone who believes a proposition typically doesn’t assert that proposition very often.\(^{76}\) But consider again

\[(4') \quad \text{If } s \text{ believes that } p, \text{ then } s \text{ is disposed, when asked whether } p \text{ by a trusted friend and in a mood to answer sincerely and unafraid that the answer will mislead or offend or spoil a surprise, to say, assert, insist, affirm, avow or the like that } p.\]

As we saw above, numerous cases can be given in which (4’)’s manifestation condition holds and no assertion is made. But it is nevertheless true that it is very likely that a person who believes \(p\) will assert that \(p\) when asked whether \(p\) by a trusted friend and in a mood to answer sincerely and unafraid that the answer will mislead or offend or spoil a surprise. I therefore consider it safe to assume that (4’) picks out a particular disposition that believers typically possess.

\(^{76}\) There are exceptions, as where the repetition of a religious mantra amounts to assertion. (Though repetition of a religious mantra is probably more often a different kind of speech act.)
Hereafter I will not use an “under favorable conditions” clause when identifying a disposition. But I will strive to adhere to the rule of thumb just presented, in the way that I have with (4’). 77

5.3 A Taxonomy of Doxastic Dispositions

Returning, then, to the doxastic dispositions of which there is common knowledge, we can first of all divide these dispositions according to whether their immediate manifestations are mental or physical. Many doxastic dispositions ultimately have physical manifestations, at least in creatures like us. A belief might dispose you to feel surprise, but this in turn disposes you to certain physiological and behavioral manifestations. And of course some theorists—Identity Theorists—think all mental manifestations are themselves physical. But as even the Identity Theorist can agree, some doxastic dispositions are initially manifested in mental states or events before being manifested in purely physical ways; these are the dispositions that I’ll be calling “mental dispositions.” Those that are immediately manifested purely physically will be called “physical dispositions.”

Mental dispositions may be manifested in mental events or processes and in mental states. Mental events and processes can be voluntary or involuntary. Voluntary mental events or processes come in two main varieties: internal speech acts and deliberations. At least four of the main kinds of speech acts that Austin and Searle have

77 (5) will need some supplementation if “under favorable conditions” is struck from it, since it fails to specify any manifestation conditions at all. The lacuna can be filled as follows. Someone who believes that \( p \) is disposed to perform actions explainable in terms of the belief that \( p \) when the action that is preferable given \( p \) is different from the action that is preferable given not-\( p \).
identified can occur internally. There can be internal assertives (where one says to oneself that something is so), internal directives (where one commands oneself to do something), internal commissives (where one vows to do something), and internal expressives (where one gives private verbal expression to a feeling). Belief can plainly be manifested in (at least) internal assertives, directives, and commissives. Thus common knowledge is bound to include items that concern internal speech-act dispositions—for example:

(7) If $s$ believes that $p$, then $s$ is disposed to assert internally that $p$ when considering some matter on which the truth of $p$ has bearing.

(8) If $s$ believes that $p$, then $s$ is disposed to make internal assertions that imply or presuppose $p$ when considering matters on which the truth of $p$ has bearing.

(9) If $s$ wants $p$ and $s$ believes that $\phi$-ing is the best way $s$ can bring about $p$ then $s$ is disposed to command herself to $\phi$.

78 Declaratives (wherein some relationship is established or some object given some status—e.g. “I pronounce you husband and wife”) typically require an audience. But there may be some limited subclass of declaratives (perhaps, e.g., “I forgive him”) that can be performed privately.

79 That is, the best given the drawbacks and the additional benefits of $\phi$-ing and of the alternatives to $\phi$-ing, and given the relative likelihood of securing $p$ by $\phi$-ing versus alternatives to $\phi$-ing.
(10) If $s$ believes that $\phi$-ing would not be trivially easy for her, but that $\phi$-ing is an important duty that she is under or that achieving her potential depends on her $\phi$-ing, then $s$ is disposed internally to commit herself to $\phi$-ing.

Turning now to the other main kind of voluntary mental process, belief can be manifested in both theoretical and practical deliberation. Audi’s (3) is correct, but narrow. It is true that when we believe $p$ we reason practically in accordance with $p$ or, in other words, treat $p$ as true in our reasoning, leaving alternatives to $p$ out of account. But practical reasoning is not limited to planning. There is also practical reasoning that leads immediately to one-step actions (as when a driver immediately executes her deliberated decision to exit the freeway). And the manifestation of belief in reasoning is not limited to practical reasoning. Someone who believes that $p$ will tend to leave alternatives to $p$ out of account when $p$ is relevant to his theoretical deliberation (as when a detective, in deliberating about who committed a crime, takes for granted that a human being—rather than an animal, a demon, or an extraterrestrial—did it). To capture the more general deliberative disposition that comes with belief, we need something more like:

(11) If $s$ believes that $p$, then $s$ is disposed when reasoning, whether practically or theoretically, to treat $p$ as true (or use $p$ as a premise) and leave alternative possibilities out of account.

---

80 Ross and Schroeder (forthcoming), among others, put the point in terms of “treating $p$ as true.” Still others put it in terms of “using $p$ as a premise” in reasoning.
We may also identify some specific inferential dispositions that come with belief—for example:

(12) If $s$ believes that $p$ and is not disposed to believe that $q$, then $s$ is disposed to come to believe that $q$ upon coming to believe that if $p$, then $q$.

(13) If $s$ believes that not-$q$ and is not disposed to believe that not-$p$, then $s$ is disposed to come to believe that not-$p$ upon coming to believe that if $p$, then $q$.

(14) If $s$ believes that everything is $F$, then for any individual $a$, $s$ is disposed to believe that $a$ is $F$, provided $s$ is not disposed to believe that $a$ is $F$.

(15) If, for some individual $a$, $s$ believes that $a$ is $F$, then $s$ is disposed to believe that something is $F$.

(12)-(15), or variants thereof, can also serve to cover a major class of involuntary mental events that manifest belief. Belief disposes us to involuntary inferences of the sorts picked out in (12)-(15), as well as to similar inferences in our voluntary deliberations.

---

81 Note that to be indisposed to $\phi$ is not the same as to fail to be disposed to $\phi$. To be indisposed to $\phi$ is roughly (or perhaps exactly) to be disposed not to $\phi$. 81
In Audi’s (1) we have another kind of involuntary mental event that manifests belief. Believing that \( p \) disposes you to be surprised if you later find out (or come to have strong reason for thinking) that \( p \) is false. But while a surprise is an event, there is also a state of being surprised, which may persist for some duration (and perhaps could in principle persist indefinitely). Although the boundaries are somewhat hazy, I’ll class feelings of surprise with mental states, rather than events.\(^2\)

Turning now to mental states that can manifest belief, we have three main categories: cognitive, conative, and affective. Affective states are simply feelings or emotions. Cognitive states are non-affective states (though they are often accompanied by affective states) that represent the world as being some way. The paradigm type of cognitive state is belief. But confidence or sureness is also a cognitive state, as are conjecturing and wondering, and even doubt (though doubt is negatively valenced in a way to be explored in the next chapter). Conative states are (after the Latin conatus for “inclination” or “striving”) states of motivation and motivated striving. The conative states include desire (and aversion), inclination, impulse, willing, intending, and trying.\(^3\)

---

\(^2\) Two issues are worth remarking upon here. One is the issue of how states and events are to be distinguished. After all, both involve objects, properties, and times. We might want to distinguish events from states by saying that events are changes (or series of changes, as in a battle or a dinner or a wedding), whereas states are not. An event is an object’s gaining or losing a property at a time; a state is an object’s having a property over a period of time. Kim (1976), however, conceives of events as property instantiations at times, in which case events need not be changes. So the matter bears further consideration. A second issue is that there is a close relationship between certain dispositions to be in states and certain dispositions to undergo events. Anger is a state, but getting angry is an event; and an irascible person is disposed to both. In such cases, it is not obvious whether we should distinguish two dispositions, and if not, whether we should regard the one disposition as a disposition to be in a state or a disposition to undergo an event. I’ve chosen the latter for the taxonomy I’m giving here, but there is no deep reason for this choice. And I will not be defending my choice to treat events as changes and states as non-changes. Since these issues do not bear on my argument, I won’t try to sort through them here.

\(^3\) I will not tackle here the difficult question of whether willing, intending, and trying are distinct and, if so, just how they are to be distinguished. And similarly for desire, inclination, motivation, and
We already have in (12)-(15) and Audi’s (2) the beginnings of an account of how believing one thing makes a difference to one’s dispositions to believe other things. Items dealing with other cognitive states might be added, such as:

(16) If $s$ believes that $p$, then $s$ is disposed to conjecture that $q$ only if $s$ is indisposed to see $p$ and $q$ as incoherent with each other.

(17) If $s$ believes that $p$ and believes that if $p$, then $q$, then $s$ will be indisposed to wonder whether $q$.

(18) If $s$ believes that $p$, and $s$ believes that $q$ is probable given $p$, then $s$ will be disposed to be confident that $q$ and indisposed to doubt that $q$.

Belief is also commonly known to have bearing on certain conative dispositions. For example,

(19) If $s$ desires that $p$ and believes that $p$ will be the case only if $q$ is the case, then $s$ is disposed to desire that $q$.

---

*impulse. Nor is it necessary here to define the “conative” states. I trust the family resemblance is clear enough for present purposes.*
(20) If $s$ desires $o$ and $s$ believes that $\phi$-ing is the only (or the best\textsuperscript{84}) way for $s$ to obtain $o$, then $s$ is disposed to try to $\phi$.

And the disposition to surprise (1) is just one of many affective dispositions that can come with belief. Consider:

(21) If $s$ desires that $p$ and believes that $p$, then $s$ is disposed to be glad that $p$.

(22) If $s$ desires that $p$ not be the case and believes that $p$ is the case, then $s$ is disposed to be sad or upset or annoyed that $p$.

(23) If $s$ believes that someone has $\phi$-ed him (or someone he cares about) and believes that he (or the person he cares about) has a right not to be $\phi$-ed, then $s$ will be disposed to be angry that he (or the person he cares about) was $\phi$-ed.

(24) If $s$ believes that $p$ is the case, then $s$ will be indisposed to fear that $p$ (or that not-$p$, for that matter).

(25) If $s$ believes that $p$ is not the case, then $s$ will be indisposed to hope that $p$ (or that not-$p$, for that matter).

\textsuperscript{84} That is, the best given the drawbacks and the additional benefits of $\phi$-ing and of the alternatives to $\phi$-ing, and given the relative likelihood of obtaining $o$ by $\phi$-ing versus alternatives to $\phi$-ing.
(26) If $s$ believes that she has $\phi$-ed and believes she should not have $\phi$-ed, then $s$ will be disposed to feel regret or guilt or shame or embarrassment that she has $\phi$-ed.

(27) If $s$ believes that $s^*$ has willingly benefited $s$ (or someone $s$ cares about), then (all else equal) $s$ will be disposed to love $s^*$ and be grateful to $s^*$.

(28) If $s$ believes that $s^*$ has willfully (or negligently) done great harm to $s$ (or to someone $s$ cares about), then (all else equal) $s$ will be disposed to hate $s^*$.

(29) If $s$ believes that $s^*$ has done great things (that $s$ approves of), then (all else equal) $s$ will be disposed to admire and respect $s^*$.

(30) If $s$ believes that $s^*$ has $\phi$-ed and believes that $\phi$-ing is good and right, then $s$ will be disposed to feel approval toward $s^*$’s $\phi$-ing.

(31) If $s$ believes that $s^*$ has $\phi$-ed and believes that $\phi$-ing is bad and wrong, then $s$ will be disposed feel disapproval toward $s^*$’s $\phi$-ing.

Some of these items concern propositional affective states—anger that something is the case, gladness that something is the case, etc.—and others concern objectual affective states—love of a person, disapproval of an action, etc. In both cases, there is
the interesting question how belief is related to the affective state. Is belief in some way *constitutive* of the affective state?\textsuperscript{85} While acknowledging that there is sure to be some intimate and interesting relationship between beliefs and (at least some) emotions, I won’t take a stand here on the nature of that relationship.\textsuperscript{86}

We have now covered the most salient doxastic dispositions that are immediately manifested mentally. Let us turn to physical doxastic dispositions. The major division here is between verbal and non-verbal dispositions. Belief is manifested in speech acts, and it is also manifested in non-verbal behavior. Belief can be manifested in all the main kinds of *public* speech acts. Audi’s (4) deals with (public) assertives. And there are public analogues of (8), (9), and (10):

(32) If $s$ believes that $p$, then $s$ is disposed to make assertions that imply or presuppose $p$.

(33) If $s$ wants $p$, $s$ takes himself to have the right to command $s^*$ to $\phi$, and $s$ believes that $s^*$’s $\phi$-ing is the best way to bring about $p$ (given the likelihoods, the drawbacks, and the additional benefits of $s^*$’s $\phi$-ing and of the alternatives to $s^*$’s $\phi$-ing) then $s$ is disposed to command $s^*$ to $\phi$.

\textsuperscript{85} See Solomon (1993: ch. 5) for a view along these lines.

\textsuperscript{86} I do assume this much: holding the relevant beliefs is not \textit{sufficient} for the propositional or objectual affective states mentioned above. There is more to admiration than believing that the person has done great things. There is more to hatred than believing that the person has harmed a loved one. The beliefs merely dispose one toward whatever else is needed to have the emotions.
(34) If $s$ believes she can $\phi$ and wants to be accountable to $s^*$ for $\phi$-ing, then $s$ will be disposed to promise $s^*$ that she will $\phi$.

Belief can also be manifested in expressives and declaratives. Items of common knowledge about such dispositions might include the following:

(35) If $s$ is grateful for $o$ and $s$ believes that $s^*$ has given $o$ to $s$, then $s$ will be disposed to express thanks to $s^*$ for $o$.

(36) If $s$ believes that she is in a context where she has the authority to establish relation $R$ between $s^*$ and $s^{**}$ via pronouncement and believes that $s$ and $s^{**}$ want to be in relation $R$, then $s$ will be disposed to pronounce $s^*$ and $s^{**}$ to be in relation $R$.

We move finally to non-verbal behavioral doxastic dispositions. These are closely related to the conative dispositions that come with belief. A belief that disposes me to try to perform an action will typically dispose me to perform that action. The exceptions will be cases in which I am unsure of my abilities or under some illusion about my abilities. So the relevant items of common knowledge will be in the vicinity of:

(37) If $s$ desires that $p$, $s$ is able to bring it about that $q$, and $s$ believes that $p$ will be the case only if $q$ is the case, then $s$ is disposed to bring it about that $q$. 
(38) If \( s \) desires \( o \), \( s \) is able to \( \phi \), and \( s \) believes that \( \phi \)-ing is the only (or the best\(^{87} \)) way for \( s \) to obtain \( o \), then \( s \) will \( \phi \).

We now have in (1)-(38) a reasonably thorough and reasonably systematic expression of common knowledge about the dispositions that are characteristic of belief. It will be helpful to group these dispositions into clusters of closely related dispositions. The major clusters are the cognitive ((2)-(3), (11)-(18)), the affective ((1), (21)-(31)), the desiderative (19), the volitive (20), the non-linguistic behavioral ((5), (37)-(38)), the self-ascriptive (6), the assertive ((3)-(4), (7)-(8), (32)), and the non-assertive linguistic ((9)-(10), (33)-(36)).

5.4 Relevant Doxastic Dispositions

Our question was: “Which dispositions make up the set of those dispositions having enough of which makes for belief?” And the currently most popular answer is: that set includes all the dispositions attributed to believers by folk psychology. In other words, believing a proposition requires having enough of the dispositions specified in (1)-(38) (or similar generalizations).

As I argued above, it is hard to find doxastic dispositions that seems strictly necessary for belief, and it seems quite clear that no set of these dispositions is both necessary and sufficient for belief. Consider the disposition identified in (1), for example. It would of course be extremely unusual to find a person who believes a

\(^{87}\) That is, the best given the drawbacks and the additional benefits of \( \phi \)-ing and of the alternatives to \( \phi \)-ing, and given the relative likelihood of obtaining \( o \) by \( \phi \)-ing versus alternatives to \( \phi \)-ing.
proposition but who is not disposed to feel surprised upon receiving overwhelming evidence against that proposition. But the disposition to feel surprised is not strictly necessary for belief. Carl Ginet (2001: 6) writes,

> It is a symptom of Sue’s not having prepared herself for the possibility that Hank was not bluffing that she felt surprise on learning that he was not…. [But a] very experienced and cool poker player might suffer no emotional reaction at all at having such a belief falsified.

Other counterexamples are even more extraordinary, but nevertheless compelling. We can imagine subjects of a non-human species (Vulcans, perhaps) whose emotive repertoire is somewhat different from humans’ and who have no capacity for feelings of surprise. Yet if we imagine these subjects having all the other dispositions (with respect to a particular proposition) that feature in (2)-(38), it will seem clear that they hold beliefs, despite their lacking the disposition to feel surprised.

Or consider (2). It would be extremely unusual for a human being to hold a belief but have no disposition to believe obvious consequences of the proposition believed. But imagine a (perhaps non-human) subject who lacks that disposition with respect to a proposition $p$, but who is disposed to assert $p$ both internally and publicly, to treat $p$ as true in her planning, to be glad that $p$, and so on. It is hard to deny that this subject believes $p$ despite the absence of a disposition that is highly typical of human belief.

I won’t repeat the argument for each of (3)-(38). But it is clear how to apply the pattern of argument used for (1) and (2) to any of these items. For any doxastic disposition, imagine a being who has just about every other disposition in the list, but not the disposition in question (usually by imagining the subject to lack some underlying...
capacity). And it is clear enough what the outcome will be: it will be very hard to deny
that the subject believes, despite the absence of the doxastic disposition in question. We
will end up with few if any doxastic dispositions that are strictly necessary for belief.

By a similar argument we can satisfy ourselves that none of these dispositions is
individually sufficient for belief. Imagine a being who is disposed to feel surprised at
strong evidence against \( p \), but who lacks all the other doxastic dispositions relevant to
believing \( p \). He is not disposed to assert \( p \) internally or publicly, to treat \( p \) as true in
reasoning, to draw obvious consequences from \( p \), to be upset that \( p \) if he doesn’t want \( p \)
to be the case, and so on. The case is a strange one, but we can still confidently deny that
the subject believes \( p \). And the verdict is likely to be the same for each of the doxastic
dispositions that feature in (2)-(38). Few if any doxastic dispositions are individually
sufficient for belief.

I have argued for a lenient view on which a subject believes a proposition
whenever the subject has enough of the relevant doxastic dispositions. Which ones are
relevant? The dominant view is that the dispositions featuring in all, or virtually all, of
(1)-(38) (or near neighbors thereof) are relevant.

I will defend a moderately detailed view, though I do not think all the details
matter for the argument of the dissertation. On my view, the physical doxastic
dispositions (those appearing in (4), (5), and (32)-(38)) do not matter as much as the
mental doxastic dispositions. It seems to me that if a subject has enough of the mental
doxastic dispositions, then the subject has enough simpliciter. And if a subject lacks too
many mental doxastic dispositions, then she doesn’t believe, regardless of how many physical doxastic dispositions she has.\(^8\)

Consider the Weather Watcher case. The Weather Watcher has all the cognitive doxastic dispositions, all the affective doxastic dispositions, and, we may suppose (though Strawson doesn’t stipulate this), all the internal assertive and self-ascriptive doxastic dispositions that are characteristic of believing, say, that it’s raining. But she lacks volitive dispositions and all dispositions to non-linguistic and public linguistic behavior. Yet the Weather Watcher case does not seem to be (and is generally not regarded as) a hard case. The Weather Watcher clearly believes it is raining. The belief enters into her cognitive operations and impacts upon her emotions. She may say to herself, “It’s raining!” and, “I do believe it is raining.” She just can’t do anything about it; that is, she can’t respond behaviorally to the fact that it is raining.

Now, a lenient dispositionalist who thinks the physical dispositions matter just as much as the mental dispositions\(^9\) might argue that one need not have nearly all the doxastic dispositions to qualify as believing, and so perhaps having all the mental dispositions is enough, even though the physical dispositions are equally relevant. But

---

\(^8\) This view is at odds with Dennett’s interpretationism, which limits the behavior to be predicted to overt behavior. But notice that we don’t just give intentional interpretations of other people’s behavior; we also give intentional interpretations of our own behavior. When we do that, the “behavior” that we try to explain and predict includes internal affirmations, trains of thought, feelings, and other internal states and processes in addition to overt behavior. (Some philosophers of mind have even maintained that such interpretation is the only way we can know our own mental states.) So there is room for a form of interpretationism that understands the behavior to be explained and predicted more broadly than Dennett understands it. The view that only mental doxastic dispositions matter to belief is thus compatible with interpretationism as such, though it is at odds with the most prominent interpretationist views.

\(^9\) Schwitzgebel (2002) seems to take this view. Or, more carefully, he seems to take it that, while different people might have different concepts of belief, most of us have a concept of belief that is unbiased between mental and physical doxastic dispositions. Schwitzgebel is at pains, however, to resist bias in favor of physical dispositions.
this response is dubious. If it were correct, then a subject would presumably count as believing if the subject has all the physical doxastic dispositions and none of the mental ones. Suppose a subject publicly asserts that it’s raining and acts as though he believes it’s raining (dodging under awnings and buying an umbrella, etc.); but he is disposed neither to be glad nor to be annoyed that it’s raining, he is not disposed to say to himself, “It’s raining,” he is not disposed to treat it as true that it’s raining in his planning, he draws no conclusions from the proposition that it’s raining, and so on. The proposition that it’s raining animates his limbs and moves his tongue, but it doesn’t touch his mind. There will be little temptation to say that this subject believes it is raining. We might be tempted to posit something in his brain that represents rain. But if we’d call that something a “belief” we won’t attribute the belief to him. It is not a belief he holds. It is like a case of demonic possession or a case of manipulation by a technology that circumvents the subject’s mind. There may be a belief somewhere in the system, but it is not a belief of the subject’s.

This is not to deny that there can be cases of unconscious belief. Freud popularized the idea that a subject can hold a belief that is cordoned off from her conscious awareness because it is too unpleasant—e.g. the belief that her mother had an affair with her half-brother. It is true that unconscious belief would be manifested in behavior without featuring in conscious thought. But there is nevertheless a marked contrast between unconscious belief and the radical circumvention of the mental considered above. Unconscious belief does manifest itself mentally—in feelings, desires, and unconscious cognition. It is only kept out of conscious cognition and resists self-attribution.

92
What about animal beliefs? Fido believes the cat is in the tree. But Fido has relatively impoverished mental capacities and thus a sparser set of mental dispositions than I have when I believe the cat is in the tree. Does Fido have enough of the mental doxastic dispositions to qualify as believing according to my “mentalistic” lenient dispositionalism?

Fido doesn’t have internal linguistic doxastic dispositions; he probably lacks some of the affective dispositions that I have; and he surely doesn’t have all the cognitive dispositions that I have (e.g. the disposition to self-ascribe belief). But his rudimentary reasoning will operate on the proposition that the cat is in the tree; his desiderative and volitive dispositions will be appropriate to the belief that the cat is in the tree; perhaps he is even disposed to be surprised upon turning around and seeing the cat behind him on the ground.

It begins to sound as though Fido is a dissociation case. And I’m somewhat inclined to avoid saying that. I’d like to be able to take at face value our belief-ascriptions to (fairly sophisticated) animals. So, although I don’t think much weight can be given to physical doxastic dispositions, I think animal beliefs give some impetus to the claim that physical doxastic dispositions are not irrelevant to belief.

\(^{90}\)Speaks (2003: §8.3.2) raises the question whether there is indeterminacy in the beliefs of animals. Does the dog believe that the cat is in the tree? Or that the cat is in the tall object? Or just that the cat is up there? Is there even a fact of the matter which thing the dog believes? I am in agreement with Speaks that the problem isn’t merely an epistemic one—it isn’t that the dog believes a proposition expressible in English, but we just can’t figure out which one. But while Speaks seems to favor the view that there is indeterminacy in the content of the dog’s belief, I lean toward the view that the dog determinately believes a particular proposition, but one that isn’t translatable into any existing human language. We surely have concepts that dogs lack, and dogs may have concepts that we lack and for which we (therefore) have no words. But the question is extremely difficult, and fortunately nothing in my argument turns on the answer.
Alternatively, one could say that the dispositions you need to have enough of to qualify as believing are the dispositions you are capable of having. A dog is not dissociated in virtue of lacking cognitive dispositions that it is unable to possess (while having other dispositions characteristic of believing). The dispositions that it is unable to possess are irrelevant to whether it believes. My view, then, is (in dispositionalist terms) that to believe a proposition is to have, relative to that proposition, enough of the dispositions featuring in (1)-(38) that one is capable of having, where the physical dispositions count for less (if they count for anything) than the mental dispositions.

But I have so far only given reason to favor my own “mentalist” version of lenient dispositionalism over a “neutral” version that is like mine in taking many dispositions to be relevant to belief. Why accept either one instead of a sparser view on which rather few dispositions are relevant to whether a subject believes?

My answer is that there are many dispositions—anyway, many mental dispositions—that can be used to generate hard dissociation cases. This claim will be substantiated shortly. But there is one complication that needs to be addressed first.

Consider again the Sunday Theist, who is disposed to think, feel, and act like a theist at church or at the births of his children, but who is disposed to think, feel, and act like an atheist at work. This is among the hardest of dissociation cases. But the source

---

91 This wrinkle could be used to secure the right verdict in the Weather Watcher case. But I don’t think it allows us to dispense with the demotion of the physical doxastic dispositions. For it does not help at all with the case of a subject who is capable of mental doxastic dispositions, but lacks the mental doxastic dispositions characteristic of believing \( p \), while possessing the physical doxastic dispositions characteristic of believing \( p \). As I’ve said, such a case is not a dissociation case, but a clear case of non-belief. We thus still need to give priority to the mental doxastic dispositions.

92 It represents the main kind of case that Schwitzgebel (2001) leans on to motivate the existence of “in-between believing.”
of the difficulty is not that the Sunday Theist has dispositions from some doxastic
disposition clusters and not others. It’s not that, say, he has theistic cognitive dispositions
but atheistic affective dispositions. He seems to have theistic cognitive and affective
dispositions (and the rest), but only in specific circumstances; and he seems to have
atheistic cognitive and affective dispositions (and the rest) in other specific
circumstances.

The Sunday Theist is like a material that is disposed to break when struck when
(moderately) cool but not disposed to break when struck when (moderately) warm. It’s
not clear whether to call such a material fragile. Or consider a person who is energetic
from 6am to 2pm but lethargic from 2pm to 10pm (and asleep the rest of the time). It’s
not clear whether to call such a person energetic. Or consider a person who is
compassionate at home and cutthroat at work. It’s not clear whether to call such a person
compassionate. Similarly, it’s not clear whether to call the Sunday Theist a believer.

Such cases are borderline cases of disposition possession. A material that is
disposed to break when moderately cool but not when moderately warm isn’t clearly
fragile and isn’t clearly sturdy. But no amount of further inquiry is going to settle the
question. Similarly, no amount of further inquiry will settle the question whether the
Sunday Theist believes that God exists. He is a borderline case.

This is one way for a subject to be a borderline case of believing: the subject can
be a borderline case of doxastic disposition possession. But there is another way to have
a borderline case of believing: the subject can (clearly) possess some doxastic
dispositions and (clearly) not possess others, so that it is unclear whether the subject
possesses enough of the relevant dispositions to qualify as believing. Consider the
Aversive Racist case. It is quite clear that the Aversive Racist possesses some of the dispositions characteristic of believing that race makes no significant difference to intelligence. But it is also quite clear that he does not possess others of the dispositions characteristic of so believing—indeed, he clearly possesses dispositions characteristic of not believing, and even of disbelieving. We thus need to recognize two (overlapping) kinds of hard dissociation cases: those where the subject is a borderline case of possessing certain doxastic dispositions and those where the subject (clearly) possesses some of the relevant dispositions and not others.

I am not claiming that every hard dissociation case is hard because the subject possesses some of the relevant dispositions and not others. I recognize that many dissociation cases are hard because of borderline disposition possession. What I am committed to is the prediction that every case where the subject possesses several mental doxastic dispositions and lacks several mental doxastic dispositions will be a hard case. Let us see how this prediction fares.

The most severe dissociation among the cases enumerated above is that of the Aversive Racist.\footnote{I won’t consider the Academic Nationalist case separately, since it (or a suitably detailed version of it) is relevantly similar to the Aversive Racist case.} The Aversive Racist has dispositions from several clusters that are characteristic of believing that race makes no difference to intelligence. His patterns of reasoning, assertion, and self-ascription are characteristic of egalitarian belief. But his affective dispositions, and some of his volitions and non-linguistic behaviors suggest a lack of egalitarian belief and, in fact, the presence of inegalitarian belief. Here the
prediction is borne out: strong dissociation in the subject’s mental doxastic dispositions yields a hard case.

Gendler’s Hesitant Skywalker, by contrast, is a fairly easy case. Despite her terror, her timid steps, her firm grip on the rail, her cursing, and her perspiration, it is agreed by all contributors to the literature that the Hesitant Skywalker believes the Skywalk to be secure. True, some of her emotions, desires, and actions while she is on the Skywalk are as they would be if she did not believe the Skywalk is safe. But two points must be borne in mind. First, her emotions, desires, and actions are in all other situations characteristic of belief that the Skywalk is safe. She would willingly walk under the Skywalk (on solid ground), free of fear that the Skywalk will collapse and fall on her. She wouldn’t fear for her children’s lives if they go on the Skywalk without her. Second, even when the Hesitant Skywalker is on the Skywalk, her belief that it is safe is manifest in many ways. Most obviously, she keeps going. If she had any real doubt about the safety of the Skywalk, she would turn back at once. She’ll also continue to assert sincerely that the Skywalk is safe. (She might scream, “I’m going to die!” though not sincerely.) She’ll still be disposed to use the proposition that the Skywalk is

94 The Contagion Avoider and Shrieking Movie-Goer cases can be given the same treatment as what I’ll give to the Hesitant Skywalker case, and I won’t discuss them separately.

95 It is worth noting that Schwitzgebel does not use any of Gendler’s examples to motivate his idea of in-between believing. Schwitzgebel (2010) is explicit that he considers the Hesitant Skywalker to be a clear case of belief, rather than a case of in-between believing. Myers-Schulz and Schwitzgebel (2013) do report that less than half of the subjects in their experiment were willing to affirm their analog of, “The movie-goer believes there is no ghost coming into the cinema.” (Their example was different—it was a movie in which alien creatures emerge from a kitchen tap.) But Schwitzgebel looks to harder cases for borderline cases of belief.

96 Of course, there can be cases where a Skywalker changes her mind, or at least becomes more deeply dissociated, while on the Skywalk. But that is not Gendler’s case, and it is in crucial ways less interesting that Gendler’s case.
safe in her reasoning. And even her affective dispositions exhibit only selective failure to conform to the pattern of belief that the Skywalk is safe. The Hesitant Skywalker is terrified for herself, but she experiences no terror at seeing her friends or her children venture out to join her on the Skywalk (if she did, she’d make every effort to stop them). There just aren’t enough dispositions that are uncharacteristic of belief to give us much pause about ascribing belief to the Hesitant Skywalker. On the account of belief defended here, then, we should expect to find discussants generally willing to ascribe to the Hesitant Skywalker the belief that the Skywalk is safe. And that is just what we do find in the literature.  

Gertler’s Compulsive Salt-Dropper is a somewhat harder case. The Salt-Dropper’s belief-discordant emotions are somewhat less narrowly circumscribed than the

---

97 Provided, again, that we are talking about a case like Gendler’s, where the signs of non-belief are limited to a proper subset of the affective dispositions and a rather narrow subset of the behavioral dispositions. By supplementing these with other dispositions characteristic of non-belief, we could quickly arrive at a borderline case. (Gendler’s is perhaps a borderline borderline case.) We must be careful here to keep firmly in view whichever case we want to use as a test case for the account of belief.

98 Mightn’t a contextualist about dispositions say that, when we’re talking about the Hesitant Skywalker, the only manifestations that matter to disposition ascription are those that occur on the Skywalk? That, after all, is the situation that is most salient to the conversation.

It is not clear to me that this would change the verdict on the case, though the case would be a somewhat harder one if what happens on the Skywalk is all that matters. But I do not think the contextualist can safely take this line. As noted above, Choi (2011) has raised an important objection to salience-based contextualism about dispositions: we are inclined to ascribe dispositions even when interfering factors are conversationally salient. You tell me that a motorcycle is being given away as a door prize at the department picnic and ask what I’d do if I won it. “My wife would make me sell it,” I reply. “Don’t get me wrong—I am disposed to keep a motorcycle that I win as a door prize. But I can tell you I wouldn’t end up keeping it. My wife just wouldn’t let me.” The interfering factor (my wife’s intervention) is conversationally salient. Yet I still ascribe to myself the disposition to keep the motorcycle, even though I wouldn’t keep it in situations where that interfering factor is present.

The way around this objection, I think, is to say that the situation that the conversation is about is not all that matters to the disposition ascription. Other situations matter, too. Conversational context may narrow down the set of relevant situations, but it doesn’t narrow it down to the particular situation under discussion.

99 The Inflexible Reorganizer is similar and won’t be discussed separately.
Hesitant Skywalker’s. The Compulsive Salt-Dropper would, for instance, feel troubled to see someone else spill salt and not perform the prescribed ritual. Gertler herself proposes to attribute both the belief that spilling salt brings bad luck and the belief that spilling salt doesn’t bring bad luck. But that isn’t clearly right. The Compulsive Salt-Dropper reasons, asserts, and on the whole acts as befits the belief that spilling salt does not bring bad luck. She continues to have salt on the table at dinner; she lets her children salt their own food; she doesn’t pay top dollar for an unspillable salt shaker. So while she’s more deeply dissociated than the Hesitant Skywalker, she’s not as hard a case as the Aversive Racist. Here again, I submit that the prediction is borne out: the case is a hard one to the extent that the subject is dissociated.

So much for the main dissociation cases from the literature. We can generate a great many other dissociation cases by imagining subjects with various combinations of the dispositions that feature in (1)-(38). It would be tiresome to check even a representative sample of such cases. But a different approach is possible. Consider the following series of cases:

Indeed, it’s not clearly possible for a subject to believe both p and not-p. At least some of the doxastic dispositions characteristic of believing p are incompatible with doxastic dispositions characteristic of believing not-p. For instance, if I’m disposed to treat p as true in my reasoning, then I’m not disposed to treat not-p as true in my reasoning. If too many of the doxastic dispositions are like this, it will be impossible to have enough of the relevant doxastic dispositions to qualify as believing p while having enough of the relevant doxastic dispositions to qualify as believing not-p. Two questions that would need to be answered to the decide the matter are “Which doxastic dispositions are such that you can have them relative to p only if you don’t have them relative to not-p?” and “How much is enough for belief—that is, how many of the doxastic dispositions are enough (and if they’re not all equally important, how are they to be weighted)?” I will not take up these questions here.

It is also worth noting also that cases of ignorance of identity like the London-Londres case of Kripke (1979) present an interesting challenge to accounts that rule out straightforwardly contradictory beliefs.
(A) John sincerely asserts, both publicly and internally, that prayer is effective (i.e. it frequently makes a difference to outcomes). But John does not pray, either regularly or irregularly, even when he badly wants something for himself or a loved one. (And it is not out of any moral qualms about prayer.) Nor is John comforted by being told that others are praying for him. Nor does he desire that others pray for him. Nor does he suppose, or even conjecture, of any particular benefits in his life or the lives of others, that they were the result of prayer.

(B) Marie sincerely asserts, both publicly and internally, that prayer is effective. And Marie desires others to pray for her and feels comforted to know that others are praying for her. But she does not pray, either regularly or irregularly, even when she badly wants something for herself or a loved one. (And it is not out of any moral qualms about prayer.) Nor does she suppose, or even conjecture, of any particular benefits in her life or the lives of others, that they were the result of prayer.

(C) Paul sincerely asserts, both publicly and internally, that prayer is effective (a significant part of the time). And Paul desires others to pray for him and feels comforted to know that others are praying for him. He does pray, but only irregularly—when he badly wants something for himself or a loved one. And he never supposes, or even conjectures, of any particular benefits in his life or the lives of others, that they were the result of prayer.
(D) Grace sincerely asserts, both publicly and internally, that prayer is effective (a significant part of the time). And Grace desires others to pray for her and feels comforted to know that others are praying for her. She prays regularly, and she often attributes particular benefits in her life and the lives of others to prayer.

All of these subjects affirm that prayer is effective. But John is a pretty clear case of self-deception: he pretty clearly does not believe what he affirms. And Grace is a clear case of believing that prayer is effective. Marie and Paul are hard cases.

This series was generated by progressively adding doxastic dispositions. We could generate indefinitely many similar series that follow the same pattern using the various dispositions that feature in (1)-(38). I won’t go through the exercise here, but it is rather clear what the outcome would be: the resulting series would have clear cases of non-belief on one end, clear cases of belief on the other end, and hard cases in the middle. This pattern is just what should be expected if virtually all the dispositions (perhaps excluding the purely physical dispositions) that feature in (1)-(38) are relevant to whether a person believes.

6. The Circularity Problem

It remains to say something about how the account of belief developed here handles a problem that has loomed large in philosophical discussions of belief over the past half century. This problem was one of the chief objections to philosophical
behaviorism—the view that every mental state is reducible to behavioral dispositions.

Here’s a simple behavioristic reduction of belief:

**Simple Behaviorism** To believe that $p$ is to be disposed, for any act type $\phi$ and any $x$ that one desires, to $\phi$ when $\phi$-ing is likely to secure $x$ if $p$ is true.

Thus to believe that erupting volcanoes are dangerous is to be disposed to do the things that are likely to satisfy one’s desires (such as the desire for safety) if in fact erupting volcanoes are dangerous.

The proposed reduction is in terms of desire. But the behaviorists also wanted to reduce desire to behavior. And it is not clear how that could be accomplished without invoking belief. One might try something like: to desire $x$ is to be disposed, for any act type $\phi$, to $\phi$ when $\phi$-ing is likely to secure $x$. But that can’t be right; subjects often don’t do what’s likely to satisfy their desires. Sadly, we often don’t know how to satisfy our desires. The stranded tourist wants to make a fire but doesn’t know that he can start a fire with a binocular lens. The hiker wants to get to the other side of the frozen lake quickly, but doesn’t know that the ice is thick enough to hold her. To get an extensionally adequate reduction, we’d have to add something concerning the subject’s doxastic state. Thus: to desire $x$ is to be disposed, for any act type $\phi$, to $\phi$ when one believes $\phi$-ing is likely to secure $x$. But now we have a reduction of belief in terms of desire and a reduction of desire in terms of belief. And it is very hard to see how to get around this if our reductions of mental states to behavior are to be extensionally adequate. For this reason (among others), the behaviorist project of reduction was abandoned.
Now, even if (as I propose) our account of belief should minimize the role of dispositions to outward behavior, there remain relevant conditions that are specified in terms of desire. Recall, for instance:

(20) If $s$ desires $o$ and $s$ believes that $\phi$-ing is the only (or the best) way for $s$ to obtain $o$, then $s$ will try to $\phi$.

So even though the account proposed here is not behavioristic, the circularity worry remains.

There have been a number of different reactions to the circularity problem for behaviorism, some of which are of interest here. Schwitzgebel (2002), whose view of belief is the inspiration for the one I am proposing, contends that circularity is only a problem for a reductive account of belief. The behaviorists were trying to reduce belief to behavior, and their project failed because reduction does not admit of circles. Schwitzgebel has no reductive ambitions and therefore thinks that the circularity in his account of belief is benign.

Audi (1972) thinks a philosophically interesting, non-circular definition of belief is impossible and offers instead a “theoretical construct analysis,” which supplies the “meaning”101" of a term by indicating the law-like propositions in which it figures. Audi concedes that circularity can be problematic even for a theoretical construct analysis. But he thinks the goal of illumination can still be served by an indisputably circular account

101 Audi uses, but does not explain, the scare quotes.
of belief if “we have reliable ways of identifying the states of affairs mentioned in the antecedents of the explicative conditionals, independently of identifying the states of affairs mentioned in their consequents…” (Audi 1972: 58). As I understand it, the idea is that circularity is benign if we have ways of “breaking in” to the circle—ways of finding out that a concept in the circle applies to an object without first finding out that the other concepts in the circle apply to it. This might happen if, for example, we have non-circular sufficient (but non-necessary) conditions for some concept(s) in the circle.102

Lewis (1972) contends that an informative—even a reductive—account of belief can avoid circularity altogether by defining belief, desire, and other mental states all at once in non-mental terms. Like Audi, Lewis looks to theoretical definition in the sciences for inspiration. Lewis’ idea is that a correct theory will often uniquely identify several unfamiliar theoretical objects or properties by relating them to each other and to familiar things by means of previously understood terms. Consider the following (Empedoclean) theory, for example:

Earth, water, air, and fire are the only fundamental elements; and earth is heavier than water, air, and fire, while water is heavier than air and fire, and air is heavier than fire.

This theory provides for the definitions of “earth,” “water,” “air,” and “fire.” Each is defined partly in terms of the others, yet the circularity is no barrier to successful

102 J. A. Burgess (2008) discusses circularity in depth and ultimately defends a view of benign circularity that is related to (though somewhat more complicated than) the view I am attributing to Audi.
definition. One could, if one liked, use the theory above to formulate each definition separately:

earth $=_{df}$ the $x$ such that for some $y_1, y_2,$ and $y_3,$ the only fundamental elements are $x, y_1, y_2,$ and $y_3,$ and $x$ is heavier than $y_1, y_2,$ and $y_3,$ while $y_1$ is heavier than $y_2$ and $y_3,$ and $y_2$ is heavier than $y_3.$

water $=_{df}$ the $x$ such that for some $y_1, y_2,$ and $y_3,$ the only fundamental elements are $x, y_1, y_2,$ and $y_3,$ and $y_1$ is heavier than $x, y_2,$ and $y_3,$ while $x$ is heavier than $y_2$ and $y_3,$ and $y_2$ is heavier than $y_3.$

air $=_{df}$ the $x$ such that for some $y_1, y_2,$ and $y_3,$ the only fundamental elements are $x, y_1, y_2,$ and $y_3,$ and $y_1$ is heavier than $y_2, x,$ and $y_3,$ while $y_2$ is heavier than $x$ and $y_3,$ and $x$ is heavier than $y_3.$

fire $=_{df}$ the $x$ such that for some $y_1, y_2,$ and $y_3,$ the only fundamental elements are $x, y_1, y_2,$ and $y_3,$ and $y_1$ is heavier than $y_2, y_3,$ and $x,$ while $y_2$ is heavier than $y_3$ and $x, y_3$ is heavier than $x.$

In similar fashion, says Lewis, a psychological theory can serve to define a number of psychological terms at once. All that is required is that every term to be defined appears in the theory, and something comprehensible is said about each one (a familiar property is predicated of each, or familiar relations are said to hold between the
things to be defined, etc.). Indeed, theoretical definition comes cheap. You can give a definition of *anything* by constructing an intelligible theory about it.

More carefully, theoretical terms can be *introduced* cheaply. Theoretical definition of previously understood terms is a different matter. Lewis readily concedes that belief, desire, and other psychological concepts were never introduced by a theory. His claim is that they mean just what they *would* mean if they *had* been introduced by a particular theory—namely, folk psychology (in the common-knowledge sense). Such a claim could be rather risky, depending on which theory is claimed to capture the meanings of the terms. But Lewis tries to play it relatively safe by letting commonsense psychology be the defining theory. It is not easy, after all, to find counterexamples to a collection of platitudes! So Lewis’ idea is that belief, desire, and other psychological states are defined all at once through (1)-(38) and related items of common knowledge.

I have no general theory to offer concerning when circularity in an account is problematic and when it is benign. But I do not think circularity is a problem only for attempts to *reduce* belief to other things. It is also a problem for the project of saying in what belief *consists*. And although I do not think it is strictly required for my project to give a constitutive account of belief, I am prepared to defend the claim that belief consists in having enough of the mental dispositions (or causal powers and liabilities) that feature in (1)-(38). I will thus forego the answer to the circularity problem to which Schwitzgebel appeals.

---


104 I doubt that, if pressed, Schwitzgebel would insist that circularity is problematic *only* for accounts of belief that are meant to be reductive. Recently in correspondence he has indicated that Lewis’
I am not quite comfortable relying entirely on Audi’s way out, though it might appear to work nicely for the position I’m defending. Since on my view belief requires only having *enough* of the relevant dispositions, and since some of the relevant dispositions—the “extracircular dispositions,” we might call them—aren’t specified in terms of belief, one might hope to “break into the circle” by finding cases where subjects qualify as believing by possessing all the extracircular dispositions. But I am not sure there are enough of these, at least if desire is understood to consist in dispositions that are to be specified in terms of belief. I fear that the extracircular dispositions will at best be enough only for *borderline* cases of belief, and that’s not enough to “break into the circle.”

I am also not prepared to bet everything on Lewis’ strategy for avoiding circularity. Lewis’ proposal is to define *all* psychological terms at once in non-psychological terms. But, first, I don’t think we *need* definitions of many of our psychological terms—our terms for phenomenal states, in particular. You can know what “pain” means simply by being in pain and associating the word “pain” with the experience type, and similarly for other phenomenal state terms. And, second, I am concerned about arguments for the possibility of mimicking mental states without having them. I am not prepared to rule out Chalmers’ zombies by my account of the meanings of psychological terms.\(^\text{105}\) And it is not altogether easy to deny the possibility of

\(^{105}\) The zombies of Chalmers (1996) are beings that are physically just like us, and who behave as we do, but that have no conscious experience—no phenomenal states (states such that there is something it is like to be in them). The possibility of zombies is highly controversial, since if zombies are possible, physicalism is false—mental properties do not (strongly) supervene on physical properties.
Putnam’s (1963) super-super-spartans—beings who experience pain but who never behaviorally manifest pain because of a cultural prohibition coupled with supreme self-control.

These cases would obviously tell against Lewis-style definitions of phenomenal states. They also (a little less obviously) tell against Lewis-style definitions of non-phenomenal, intentional states, if (as Lewis assumes) these states are defined in terms of phenomenal states. Consider the disposition to feel surprised that features in (1) above. If the feeling of surprise is a phenomenal state that could be absent when something plays its causal role, then the disposition to feel surprised is distinct from the disposition to be in a state that plays the causal role of surprise. The disposition to be in a state that plays the surprise role when presented with apparently conclusive counterevidence to a proposition is irrelevant to whether one believes that proposition. What matters is whether one is disposed to feel surprised upon receiving such evidence. If Chalmers, Putnam, and other critics of functionalism are right, belief is not to be defined in terms of states that play the causal roles of phenomenal states (like surprise), but in terms of those phenomenal states themselves.

But suppose the phenomenalist criticisms of functionalism are right. There is a way of addressing the circularity problem that these critics should find congenial. Assume for the sake of argument that belief is not itself a phenomenal state, nor a disposition to manifest some particular phenomenal state—the phenomenal

106 Lewis’ response to his own Mad Pain case requires that the subject have some physical property that plays the pain role in his species or ours. I do not see why there couldn’t be a one-of-a-kind subject who is in pain, but is not in a physical state that plays the pain role in himself or in any other species.
manifestations of belief are multifarious. But it can still be maintained that phenomenal manifestations are nonetheless the *defining features* of belief. Belief can be viewed as a matter of having enough of the relevant dispositions, where the relevant dispositions are, in the main, dispositions to manifest certain phenomenal properties in certain phenomenally specifiable circumstances.

The relevant phenomenal states should include, crucially, *felt desire*. Our desires, like our beliefs, are sometimes merely dispositional and sometimes consciously manifest. And our conscious or “occurrent” desires have a distinctive phenomenal character. There is something it is like to feel a desire for chocolate or a longing to be at sea or a craving for vengeance. These states cannot be defined or “analyzed” (in any standard sense of the term). You know the feelings by having them. They are thus available for use in an account of belief (or of dispositional desire, for that matter) without raising the specter of circularity.

This move can make Lewis’, if not also Audi’s, general strategy viable if the phenomenalist criticisms find their mark. We can perhaps “break into the circle,” as Audi wants to do, by finding enough doxastic dispositions that advert not to dispositional desire (which requires further explanation) but only to phenomenal desire (and other phenomenal states). And if we cannot find enough such dispositions, a version of Lewis’

---

107 I am inclined to think that occurrent belief manifested as *judgment* also has a distinctive phenomenal character. But I will not argue for that claim here.

108 And Schwitzgebel, in correspondence, has suggested something very much along the lines of the improved Lewis strategy that I am promoting here. This strategy fits very naturally with his “phenomenal dispositionalism.”
strategy is available that defines belief and desire at once in terms of states with familiar phenomenal characters that do not themselves stand in need of definition.

To be clear: I am not here endorsing the phenomenalist criticisms of functionalism. Nor am I suggesting that any form of phenomenализm can solve the mystery of how intentional mental states manage to have content or answer the question what ultimately determines what content a given state has. I am (I don’t mind confessing) keenly interested in the “phenomenal intentionality” program of McGinn (1988), Kriegel (2003), Strawson (2008), and others, according to which phenomenal properties have an essential role to play in a theory of intentionality. But I am not prepared to commit to any such view here. I allow that the intentionality of phenomenal states may ultimately be grounded in external states of affairs—tracking relations, dependence relations, or the intentionality of public languages. What I am proposing here is only that if Lewis’ definitional strategy falls to phenomenalist criticisms, we can still avoid circularity in our account of belief by a phenomenalist variant on Lewis’ strategy that gives analytical priority to phenomenal manifestations and phenomenal circumstances of manifestation of belief.

109 As Kriegel (2013: ch. 1) explains, the phenomenal intentionality research program encompasses a family of views of the role of phenomenal properties in intentionality. The views under this umbrella answer a number of different questions: Is intentionality independent of phenomenality? Is phenomenal intentionality “narrow” (does it depend on anything external to the subject)? Is phenomenal intentionality inherently subjective? Is phenomenal intentionality the basic kind of intentionality? And some contributors to the research program are more radical than others in their answers to these questions. To the last of these questions, for instance, Strawson answers that there is no intentionality but phenomenal intentionality, while Kriegel and McGinn say merely that all intentionality derives from phenomenal intentionality and Searle (1992) claims only that all intentional states must potentially have phenomenal intentionality.
7. Conclusion

We have arrived at an account that, though neutral between most of the major views on belief, nevertheless answers some significant questions about belief. There is no property (whether neurophysiological or nonphysical) that is shared by all holders of a belief and that is distinct from and underlies the doxastic dispositions. Believing a proposition is a matter of having enough of the relevant dispositions (or having a property that plays enough of the relevant functional role, etc.). Belief is therefore vague, and in two ways: there are borderline cases when a subject is a borderline case of possessing relevant dispositions, and there are borderline cases when a subject possesses several, but also lacks several, of the relevant dispositions. And the relevant dispositions are the dispositions associated with belief by folk psychology, conceived as common knowledge about the mental. And the mental dispositions count for more than the physical dispositions (if the latter have any weight at all).

We now have a major part of the foundation for a proper assessment of the Threshold View. What we lack is an account of confidence. But we’ll see that confidence is intimately related to doubt, and that it behooves us first to develop an account of doubt. That is the task of the next chapter.
CHAPTER 2:
ON DOUBT

1. Introduction

Given how large a role doubt has played in philosophy since Descartes, one would expect the nature of doubt to have received a good deal of philosophical attention. But the subject has been almost totally neglected by contemporary philosophers. The present chapter will review the main contemporary contributions to the subject and begin remedying the neglect by setting out an account of the concept of doubt. This account will put us in a position to give an account of confidence in the next chapter, which will complete the groundwork for our assessment of the Threshold View.

2. Peirce on Belief and Doubt

Descartes famously proposed in his First Meditation to make a fresh start with inquiry by doubting everything. C. S. Peirce took Descartes to task over this proposal, contending that Descartes’ are mere “paper doubts” and cannot stimulate inquiry the way real doubts do.

[T]he mere putting of a proposition into the interrogative form does not stimulate the mind to any struggle after belief. There must be a real and living doubt, and without this all discussion is idle. (Peirce 1992: 115)
Peirce here attributes to (genuine) doubt the power to produce belief-seeking behavior. This is one of the two main features that Peirce attributes to doubt. The other is a particular phenomenal character:

Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief…. (Peirce 1992: 114)

Peirce also speaks of the “irritation of doubt.” The phenomenal character of doubt is aversive; doubt is annoying, irritating, unpleasant.

Indeed, the phenomenal character and the motivational character of doubt are connected. Doubt motivates belief-seeking behavior because it is irritating. It is like an itch or a hunger pang.

This reminds us of the irritation of a nerve and the reflex action produced thereby…. The irritation of doubt is the only immediate motive for the struggle to attain belief. (Peirce 1992: 114)

By contrast, belief is comfortable and does not spur us to action. The upshot is that we want to preserve a state of belief and avoid theoretical indecision.110 But belief nevertheless has an important connection to action.

---

110 Peirce thinks some ways of “fixating” belief are better than others (though they all have some merits). The main subject of the essay is the relative merits of four different strategies for the fixation of belief: dogmatism (“tenacity”), authority, a priori speculation, and science. Peirce’s allegiance is to the last of these.
Our beliefs guide our desires and shape our actions….Belief does not make us act at once, but puts us in such a condition that we shall behave in a certain way, when the occasion arises. (Peirce 1992: 114)

A belief does not act as a persistent nudge to action, but stands ready to mediate our responses to the stimuli we receive. Beliefs play a crucial role in helping us satisfy our desires. As Peirce sees it, the importance of true belief lies in its relative effectiveness at getting our desires satisfied.111

Peirce’s treatment of doubt is partial and merely a preliminary to his account of scientific investigation. But he does get some important ideas about doubt on the table. Doubt bears a special relationship to belief. It is a contrary of belief, but not the mere absence of belief. Doubt drives the subject to make up her mind. Doubt has a phenomenal character, and that phenomenal character is responsible for doubt’s motivational character.

3. Thagard: Doubt as Emotional Incoherence

More recently, Paul Thagard (2005) has offered a slightly more developed account of doubt. Thagard's main contention is that doubt is an emotional response to perceived incoherence.112 In paradigm cases of doubt, a proposition is entertained by a

111 This is the main reason Peirce offers for fixing our beliefs through scientific inquiry rather than through tenacity, authority, or a priori speculation. Unlike scientific inquiry, these other means of fixing belief produce false belief as easily as true belief.

112 Thagard at one point says he thinks of doubt as “emotional incoherence.” But that is a misleading way of putting his view. He doesn’t think of the emotion as itself incoherent, but as a response to a lack of coherence between the way the subject previously believed the world to be and the way the world is represented by a new piece of evidence or by a claim made by another person.
subject (as a result of a claim made by another or an observation arising from the subject’s own perception or reflection), and the subject recognizes\textsuperscript{113} a tension between that proposition and the subject’s beliefs.\textsuperscript{114} If the subject cares about the proposition (because it is related to her practical or intellectual goals), then the subject has some emotional reaction to the incoherence.

Following Peirce, Thagard takes irritation and discomfort to be typical emotional reactions to perceived incoherence. There may also be anxiety if it is unclear whether to accept or reject the proposition and the proposition is very important to one’s goals. There may even be fear if a claim is well supported, but in tension with cherished beliefs. When a claim is strongly incoherent with one’s beliefs, doubting can involve annoyance, anger, or outrage. There may also be feelings of dislike for the person who makes the discordant claim. More rarely, doubt can occasion gladness if the object of doubt is an unpleasant prospect. In that case, doubt appears as a ray of hope.

Thagard does not deal with the effects of doubt, though he appears (Thagard 2005: 393) to endorse Peirce’s claim that doubt stimulates inquiry. His concern is to argue that doubt is not a purely cognitive matter. Doubt is a kind of “hot” cognition—emotional as well as cognitive.

Thagard’s account of doubt is (and is meant to be) compatible with Peirce’s. Together they give us the beginnings of a picture of the causal network in which doubt

\textsuperscript{113}Thagard allows that the recognition may occur unconsciously. In fact, he thinks that coherence “calculations” are normally performed by the brain independently of consciousness, and only some of the results are conveyed to consciousness.

\textsuperscript{114}Thagard appeals to the account of incoherence developed in Thagard (2000). There he distinguishes six kinds of incoherence: explanatory, conceptual, perceptual, deductive, analogical, and deliberative. Any of these may give rise to doubt.
figures. On the cause side: a claim is suggested, whether by the subject or by another; the claim is entertained by the subject; and the subject detects incoherence between the claim and her own beliefs. On the effect side: the recognition of incoherence produces an emotional and motivational response; the subject feels a kind of discomfort or irritation, which can spill over into dislike of the proponent of the claim; and the subject is motivated to resolve the tension either by making a change in her beliefs or by resisting the new claim. The picture that has emerged is a good start, but it nevertheless admits of some filling in.

4. Some Preliminaries

Before our picture can be filled in, there are several preliminaries to attend to. First, we should clarify the relationship between doubt and some related attitudes. Second, we should clarify the relationships between doubting, having (some/much/little) doubt, and having doubts. And third, occurrent doubt should be distinguished from dispositional doubt, and dispositional doubt from dispositions to doubt.

4.1 Doubt, Disbelief, and Suspension of Judgment

Salmon (1995: 1) uses the following stipulative definition of “doubt”:

\[ A \text{ doubts } p \overset{\text{def}}{=} (A \text{ disbelieves } p) \lor (A \text{ suspends judgment concerning } p). \]
Salmon acknowledges immediately that this usage of “doubts” represents a departure from ordinary usage. But it is important to see just why the definition fails to capture the ordinary sense of “doubts.”

First, disbelief is not sufficient for doubt. In fact, ordinary usage suggests that disbelief implies the absence of doubt. We do not say, “John doubts that he passed the exam” if we think John disbelieves that he passed the exam. To say that John doubts he passed the exam seems to imply that John is unsure whether or not he passed the example, though it also suggests that he leans toward thinking he did not pass.

Now, one could invoke conversational implicatures to resist the idea that, for any \( S \) and \( p \), the proposition expressed by \( S \) doubts that \( p \) entails the proposition expressed by \( \neg (S \) disbelieves that \( p) \). A standard conversational convention is to assert the stronger; that is, to assert the most informative thing for which one has adequate evidence. But if disbelieving is a way of doubting a proposition, then one fails to assert the stronger when one says merely “He doubts it” of someone whom one takes to disbelieve a proposition.

But there are features of doubt that tell against this move. As Peirce observes, doubt acts as an irritant, motivating the subject to make up her mind by inquiry or by other means. Doubt is thus a state of (at least temporary) indecision. Of course, a person who is undecided may lean one way or another. Someone who strongly doubts a proposition leans toward disbelieving it. But once a state of disbelief is reached, the

---

115 See Grice (1989). Grice himself doesn’t speak of a rule to “assert the stronger.” That rule is derived by later writers from Grice’s “Maxim of Quantity” (make your contribution as informative as required) and “Maxim of Quality” (don’t say that for which you lack adequate evidence).
decision is made. There is good reason, then, to take at face value our tendency not to attribute doubt in cases of disbelief and at least to deny that disbelief is a kind of doubt.

But if doubt is a state of indecision, then it is tempting to say that doubt entails suspension of judgment. The matter is tricky, though. There is a mental event of suspending judgment; it is one way of terminating inquiry. Doubt does not require having terminated inquiry—one might doubt while still engaged in inquiry. So doubt does not require having engaged in suspending judgment.

But there is also a state of suspended judgment, and the relationship between this state and the event of suspending judgment is not altogether clear. It is not obvious in particular whether being in a state of suspended judgment requires having engaged in suspending judgment. Consider that, while the result of getting dressed is being dressed, being dressed doesn’t entail having undergone an event of getting dressed; one might have been brought into existence ex nihilo fully dressed and remained so. Perhaps likewise a state of suspended judgment doesn’t entail having engaged in suspending judgment—one might have been brought into existence ex nihilo believing some propositions, disbelieving others, and being in a state of suspended judgment on still others.\textsuperscript{116} If the state of suspended judgment need not be preceded by an event of suspending judgment, then perhaps doubting entails a state of suspended judgment. Even

\begin{quotation}
\textsuperscript{116} Whether that is possible is a matter of controversy. Some theories of content require mental states to have the appropriate sort of history. Donald Davidson (1987) illustrates his own externalist view of content with the much-discussed Swampman example. We are to imagine that Donald Davidson is passing through a swamp (who knows why!) when the swamp is struck by lightning. Davidson is killed, but some of the muck is rearranged by the lightning bolt into a molecule-for-molecule duplicate of Davidson. This new being—Swampman—will have a functioning brain, but, on historical views of content, the operations of his brain will not involve genuine beliefs, since there isn’t the right sort of causal history that is required for belief content. I won’t take up the question here, but I am strongly inclined to say that a swampman could have beliefs, and I could not easily be convinced of any view of belief content that implies otherwise.
\end{quotation}
in the midst of inquiry, while one is still in doubt, one is in a state of suspended judgment. One might or might not terminate the inquiry by suspending judgment, which would be to fix oneself in the state of suspended judgment unless and until the question is revisited.

It may be, then, that doubt entails a state of (at least temporarily) suspended judgment. Does the state of suspended judgment entail doubt?

It is a familiar point that the state of suspended judgment isn’t a mere absence of belief. And Jane Friedman (2013) has recently argued that the state of suspended judgment must be some attitude or other. Among the options she considers (but does not pursue) is that suspended judgment is to be identified with doubt. Again, this identification will require that the state of suspended judgment sometimes obtain independently of events of suspending judgment. But if that much is granted, the identification is plausible. For suspended judgment is a state of indecision, and to posit an attitude of suspended judgment in addition to doubt would seem to multiply attitudes beyond necessity.

One might worry that suspended judgment does not have the irritating and motivating character that doubt has. Suspending judgment is a way, not of settling a question, but at least of closing inquiry. The question would seem to lose its irritating character and motivating force once inquiry is closed by suspension of judgment.

But doubt is not constantly irritating, and its motivational force does not always impinge on consciousness. And even when it does, it can often be overridden by other concerns. Furthermore, the state of suspended judgment is often characterized by dissatisfaction, and if the question becomes salient again, there is an inclination to reopen
inquiry. So if there is any distinction to be drawn between doubt and suspended judgment, it is a very subtle one indeed.

4.2 Doubting, Having Doubt, and Having Doubts

Consider the following fragments:

1) “I doubt that…”

2) “She very much doubts that…”

3) “He highly doubts that…”

4) “We have no doubt that…”

5) “They have much doubt that…”

6) “You have your doubts that…”

7) “I have some doubts that…”

Three broad kinds of doubt locutions are present in these fragments. Fragments (1)-(3) use “doubt” as a verb. Fragments (4) and (5) use “doubt” as a mass noun. And fragments (6) and (7) use “doubt[s]” as a count noun.

The verbal use and the mass noun use are quite closely related. If John has quite a bit of doubt about some proposition $p$, we can express this by saying, ‘John very much doubts that $p$.‘ or by saying, ‘John has a lot of doubt that $p$.‘ If John has just a little doubt that $p$, then we can express this by saying, ‘John somewhat doubts that $p$.‘ or by saying, ‘John has some doubt that $p$.‘

Things are a little less clear with ‘John has no doubt that $p$‘ and ‘John does not doubt that $p$.‘ The former is typically used to attribute confidence to John. The latter
could quite easily be used when John has never thought about $p$ and is therefore neither doubtful nor confident about $p$. But it may well be that the former expression has an implicature that goes beyond its semantic value: all it means is that John does not doubt $p$, but it tends to be used to express more than mere absence of doubt.

It is worth noting that \[ \neg \text{John doubts that } p \] is evidently not equivalent to \[ \neg \text{John has doubt that } p.\] The latter could be true if John has just a little bit of doubt about $p$. John could at the same time have doubt about not-$p$. Perhaps John is a juror and cannot tell whether a witness is telling the truth. He has (some) doubt that the witness is telling the truth, but he also has (some) doubt that the witness is lying and is not telling the truth. We would not say in such a case, “John doubts that the witness is telling the truth, and John doubts that the witness is (lying and) not telling the truth.” In its verbal use, “doubts” expresses an overall opposition to a proposition, though (as we observed above) an opposition falling short of disbelief. Doubting $p$ is compatible with having some doubt about not-$p$, but you cannot be said to doubt $p$ when you are more doubtful about not-$p$ than about $p$. So although doubting and having doubt are closely related, the verbal use implies a significant degree of doubt (amounting to overall opposition), whereas the mass noun use leaves the degree of doubt to be quantified explicitly or contextually.

Let us turn to the count-noun use of “doubts.” What is a doubt? Consider the sorts of answers people give when they are asked to explain their doubts:

\[ A: \text{“I have my doubts that her campaign promises will be fulfilled.”} \]

\[ B: \text{“What doubts do you have?”} \]
A: “Well, for one thing, she is promising changes that can only happen if her opponents compromise, which they are unlikely to do. For another thing. . . .”

The doubter is citing reasons to doubt. This suggests that doubts are, generically, reasons.

What kind of reasons? In the realm of belief, Robert Audi (2001: 53) distinguishes (i) reasons there are for believing something (normative reasons), (ii) reasons for one to believe something (person-relative reasons), (iii) reasons one has to believe something (possessed reasons), (iv) reasons why one believes something (explanatory reasons), and (v) reasons for which one believes something (motivating reasons). This fivefold distinction also applies in the realm of doubt. For a given proposition $p$, there can be reasons to doubt $p$, reasons for me to doubt $p$, reasons I have to doubt $p$, reasons why I doubt $p$, and reasons for which I doubt $p$.

Speaker A in the sample conversation above is appealing to reasons for which he doubts that the candidate will keep her promises. The speaker takes those reasons also to be reasons there are, reasons for him, reasons he has, and (among the) reasons why he doubts what he does. But he could be mistaken on all those counts. There might be no reason to doubt, no reason for him to doubt, and no reason he has to doubt that the candidate will fulfill her promises. And the true explanation for the speaker’s doubt might be some prejudice against the candidate. But if the speaker really does have doubts that the candidate’s promises will be fulfilled, then there are reasons for which he doubts
that she will fulfill her promises. So doubts are best identified with motivating reasons—reasons for which the subject doubts.

This minimal account of doubts connects the count-noun locutions with the others. You have doubts only if you doubt (and have doubt). Having doubts entails doubting. But the reverse does not seem to hold. It seems quite possible to doubt a proposition for no reason at all. In that case, a person would doubt without having doubts.

Doubting (having doubt) comes in degrees. Intensifiers are used with the verb “doubt” to express high degrees of doubt (“I highly doubt…,” “He seriously doubts…,” “She very much doubts…”). Normally, the mass noun “doubt” is used with quantifiers to express low degrees of doubt (“I have some doubt…,” “He has a little doubt…,” “She has a bit of doubt…”). As with the referents of other count nouns, doubts do not come in degree, though one can have a larger or smaller number of doubts, and the doubts can be more or less “serious.” It may be, though, that the having of a doubt could come in degree (if, say, one is not terribly confident of the reason for doubt, or of its relevance to the proposition doubted). We’ll return to degrees of doubt in §§7-8.

4.3 Occurrent Doubt, Dispositional Doubt, and Dispositions to Doubt

It is a familiar point that a belief can be possessed even when it is in no way impinging upon the believer’s current experience or behavior. I have believed for several years now that there is torn cartilage in my hip. But I haven’t been thinking about my

---

117 A speaker might say he has doubts about p when in fact there is no reason for which he doubts p. But it seems clear he would be misspeaking. He should just stop at saying that he doubts p.
torn cartilage all that time! I think about it if someone proposes a skiing excursion or asks me to help push a car out of the road, or if I feel a twinge of discomfort in the hip. The belief manifests itself in a limited range of circumstances. But I don’t lose the belief during those (relatively long) stretches when it isn’t manifesting itself.

A belief is said to be “dispositional” when it is possessed but not manifesting itself. When it is manifesting itself in some way, a belief is said to be “occurrent.”

Philosophers often speak of “dispositional beliefs” and “occurrent beliefs.” But it is not to be assumed that these two types of belief occupy distinct ontological categories (occurrences and states, say). For it may well be (as most writers assume) that one and the same belief (token) is at some times dispositional and at other times occurrent.

The dispositional/occurrent distinction applies to other mental states besides belief. I desire a vacation in Europe, but the desire rarely manifests itself. Most of the time it is a dispositional desire; only in the occasional idle moment does it become occurrent. I fear the consequences of peak oil and peak coal, but I do not dwell on these matters constantly. Normally my fear is dispositional, but from time to time it becomes occurrent.

Now to the point: we can distinguish dispositional doubt from occurrent doubt. I doubt that the Shroud of Turin was Jesus’ burial shroud, though I rarely think about the matter. Most of the time I doubt this proposition only dispositionally, but occasionally my doubt becomes occurrent.

Audi (1994: 420) uses the term “occurrent belief” more narrowly. On his usage, an occurrent belief is one whose content is “in some way occurring” to the subject. Audi uses the term “active” for beliefs that are in no way occurring to the subject but are nevertheless actively moderating the subject’s behavior. I feel I have too weak a grasp on what it is for a content to “occur” to a subject to define occurrent belief this way. So I opt for the broader definition in terms of manifestation.
This is why doubt isn’t a constant irritation or a constant impetus to inquiry. The content of one’s doubt can for long stretches be “out of mind.” Only when the content comes to mind does the subject experience discomfort and a desire to make up his mind.

A further distinction needs to be made. Suppose someone asks me whether quiche is high in cholesterol, and suppose I’ve never thought about the matter. It will only take a moment’s thought for me confidently to answer “Yes.” (I recall that quiche is made of eggs and that eggs are high in cholesterol, and I infer that quiche is high in cholesterol.) But I did not believe that quiche is high in cholesterol until the question was posed. I was merely disposed to believe it.

Audi (1994) discusses and develops the distinction between dispositional beliefs and dispositions to believe. It is easy enough to supply metaphors for the distinction. Dispositional beliefs can be compared to data stored on a computer’s hard drive. Dispositions to believe can be compared to data that a computer is ready to generate by performing some operation on stored data when the command is given.

Getting beyond the metaphors is somewhat trickier, though. Dispositional beliefs and dispositions to believe tend to ground similar dispositions. Return to the quiche example: I am disposed to answer “Yes” when asked whether quiche is high in cholesterol whether I dispositionally believe it or am merely disposed to believe it. If I need to avoid cholesterol, I am disposed to refuse quiche whether I dispositionally believe or am merely disposed to believe that it is high in cholesterol.

The metaphor that follows is due to Audi (1994: 420).
The computer metaphor suggests that the difference between dispositional beliefs and dispositions to believe comes down to the process by which a content is brought to bear on one’s experience and activity. If you are inferring $p$ from something else you know, then you did not dispositionally believe $p$; you were (at most) disposed to believe $p$. If you affirm $p$ on the basis of current percepts, then you were (at most) disposed to believe $p$. With dispositional belief, the information is already recorded and can be brought to bear on experience and activity without any processing.\textsuperscript{120}

However we manage to draw the distinction between dispositional beliefs and dispositions to believe, we can distinguish in similar fashion between dispositional doubt and dispositions to doubt. I have for a while now doubted that the Washington Redskins will give up their politically incorrect team name. It only just now occurred to me to doubt that the University of Notre Dame will give up theirs (the “Fighting Irish”). The former was, at all those times when it was “out of mind,” a case of dispositional doubt. The latter was, until just now, a case of disposition to doubt.

\textsuperscript{120} What if (as some cognitive scientists have suggested) inference is a normal part of the process of retrieving information from memory? Suppose in particular that episodic memory is largely reconstructive. Suppose we retain minimal imagery from our experiences and, at the time of recollection, our brains generate new imagery that coheres with the minimal stored imagery in accordance with learned principles concerning the workings of the world. If the retrieval process is typically in part inferential or quasi-inferential, shall we say that we are merely disposed to believe the contents of our episodic memory? But if we do not dispositionally believe, but are merely disposed to believe, the contents of episodic memory, what becomes of our autobiographical knowledge? Shall we say that we do not, after all, know much about our own pasts? Or shall we say that knowledge does not, after all, require belief (but only dispositions to believe)? I don’t propose to discuss these questions here, worthy as they are of investigation.
5. Dubitative Dispositions

5.1 Against Realizer Functionalism

In Chapter 1, I introduced the major families of views of belief that are considered live options by philosophers of mind. These included dispositionalism, role functionalism, realizer functionalism, representationalism, and interpretationism. The dispositionalist says that believing a proposition is a matter of possessing the relevant dispositions. Functionalists associate a causal role with believing a given proposition; they divide into realizer functionalists and role functionalists. Realizer functionalists take there to be some property that plays the causal role in all instances of believing that proposition in a given possible world; they hold that to believe that proposition is to have the property in question. Role functionalists allow that various properties might play the relevant role; they say that to believe the proposition in question is to have some property or other that plays the relevant role. Representationalists hold that believing a proposition is a matter of being in a state that represents that proposition and that has whatever (usually functional) properties make the representation qualify as a belief. And interpretationists hold that a subject believes a proposition when that proposition would be attributed by an intentional description of the subject that is effective at predicting her behavior.

The same options are available for views of doubt. We could take doubt to be a matter of possessing certain "dubitative" dispositions, or of possessing some (perhaps neurophysiological) property or representation that plays the relevant role, or of being predictable via folk psychological generalizations concerning doubt. What I now want to argue for is an account of the concept of doubt modeled on the account of the concept of
belief from the previous chapter. Doubting a proposition is a matter of having enough of the relevant dispositions (or having a property that plays enough of the relevant role, etc.), and there are a number of dispositions that are relevant. The argument will proceed much as before. I will argue against realizer functionalism about doubt and then give an argument to the best explanation, centrally involving doubt dissociation cases, for a lenient account of doubt over a strict account. As before, the account will be neutral amongst dispositionalism, role functionalism, representationalism, and interpretationism.

Realizer functionalism about doubt should be rejected for the same reasons that realizer functionalism about belief should be rejected. It is very hard to deny that doubt is multiply realizable by physiologically very different creatures. So doubt cannot be identified with any particular physiological property. Furthermore, mad doubt seems impossible. Try to imagine a subject who doubts that the weather will be pleasant on the day of his outdoor wedding, but who has no dispositions characteristic of doubt. He makes no back-up plans; he does not worry at all; he affirms, both internally and publicly, without any hedging, that the weather will be pleasant; and so on. Not only does this seem impossible to imagine; a subject who lacks all such dispositions seems like a clear case of not doubting that the weather will be pleasant on his wedding day. Doubt must be more closely connected with dubitative dispositions than realizer functionalism makes out.

Now, we could take a strict view on which some set of dubitative dispositions is necessary and sufficient for doubt (or one on which doubting is a matter of having a property that plays the whole doubt role, etc.). Or we could take a lenient view on which doubt is a matter of having enough of the dubitative dispositions with respect to some
proposition (or having some property or other that plays enough of the doubt role, etc.). I will argue for the latter option. But it will be helpful first to get a better idea what sorts of dubitative dispositions might be relevant.¹²¹

5.2 Candidate Dubitative Dispositions

In the case of belief, I distinguished several clusters of dispositions: cognitive, affective, desiderative, self-ascriptive, assertive, volitive, non-linguistic behavioral, and non-assertive linguistic. Dubitative dispositions admit of the same divisions. Here are some items of common knowledge featuring dubitative dispositions from each cluster:

**Cognitive**

(1) If $s$ doubts that $p$, then $s$ tends to doubt (a) propositions which he believes entail $p$, and (b) to a lesser extent, propositions that he believes to probabilify $p$.¹²²

(2) If $s$ doubts that $p$, then $s$ tends not to invoke $p$ in justifying his beliefs, his reasoning, and his actions.

(3) If $s$ doubts that $p$, then $s$ is disposed not to treat $p$ as true (or use $p$ as a premise) in $s$’s practical and theoretical reasoning, and $s$ tends to leave alternative possibilities on the table.

¹²¹ Here, too, I will for simplicity’s sake make my argument in dispositionalist terms and leave it as an exercise to translate the argument into functionalist, representationalist, and interpretationist terms.

¹²² $q$ probabilifies $p$ if and only if the probability of $p$, conditional on $q$, is high (greater than 0.5, at the least).
(4) If, for some individual $a$, $s$ doubts that $a$ is $F$, then $s$ is disposed to doubt that everything is $F$.

(5) If $s$ doubts that anything is $F$, then for any individual $a$ that $s$ is capable of considering, $s$ is disposed to doubt that $a$ is $F$.

(6) If $s$ doubts that $p$, then $s$ is disposed to wonder whether $p$.

(7) If $s$ doubts that $p$ and believes that $q$ only if $p$, and $s$ has no other beliefs or evidence that bear on $q$, then $s$ will be disposed to wonder whether $q$.

Affective

(8) If $s$ doubts that $p$ and cares about whether $p$, then when the question whether $p$ is relevant, $s$ will tend to feel doubtful or anxious or curious about $p$.\textsuperscript{123}

(9) If $s$ doubts that $p$, then if $s$ discovers or suddenly comes to believe that $p$ is true, or if $s$ discovers or suddenly comes to believe either (a) that someone whose judgment concerning $p$ (or related subjects) he respects, has thoughtfully affirmed $p$, or (b) that there is (what $s$ takes to be) substantial evidence for $p$, $s$ tends to be surprised.

\textsuperscript{123} This item reflects one of Peirce’s and Thagard’s main contentions about doubt.
(10) If $s$ believes that her safety depends on $p$’s being the case, but doubts that $p$, then $s$ is disposed to fear that not-$p$.

(11) If $s$ desires that $p$ be the case but has some doubt that $p$ is the case, then $s$ will tend to have an inhibited disposition to be sad or upset or annoyed that not-$p$.\textsuperscript{124}

(12) If $s$ desires that $p$ not be the case and has some doubt that $p$ is the case, then $s$ will tend to have an inhibited disposition to be glad or relieved that not-$p$.

(13) If $s$ believes that he (or a person he cares about) has a right to be $\phi$-ed, but doubts that he (or the person he cares about) has been $\phi$-ed by those who should have done so, then $s$ will tend to have an inhibited disposition to be angry or indignant or outraged that he (or the person he cares about) was not $\phi$-ed.

(14) If $s$ desires that $p$, but doubts that $p$, then $s$ will be disposed to hope that $p$.\textsuperscript{125}

\textsuperscript{124} Suppose, for instance, that I want to get a particular job, but I believe my interview didn’t go particularly well. I then doubt that I’ll get the job, though I don’t yet disbelieve that I won’t get it. My emotional state is not as it would be if I already believed I won’t get the job. But there is already emotional preparation tending in that direction. I’m inclined toward disappointment; I feel the beginnings of disappointment. But the emotion is inhibited because I don’t yet fully disbelieve that I will get the job. This type of emotional preparation with inhibition appears across a range of emotions and thus crops up in several of the items of common knowledge that follow.
(15) If $s$ believes that she has $\phi$-ed and doubts that it was morally permissible for her to $\phi$, then $s$ will tend to have an inhibited disposition to feel regret or guilt or shame or embarrassment that she has $\phi$-ed.

(16) If $s$ believes that $s^*$ has $\phi$-ed and doubts that $\phi$-ing is morally permissible, then $s$ will tend to have an inhibited disposition to feel disapproval toward $s^*$'s $\phi$-ing.

Desiderative

(17) If $s$ doubts that $p$, and if the question whether $p$ becomes relevant, then $s$ will desire to make up her mind about whether $p$.\textsuperscript{126}

(18) If $s$ desires that $p$ and doubts that $p$ will be the case if $q$ is not the case, then $s$ is disposed to desire that $q$.\textsuperscript{127}

\textsuperscript{125} But the degree of doubt matters here. A subject is unlikely to hope for those things that she highly doubts will come about, except when those things are extremely desirable.

\textsuperscript{126} This is the other main contention of Peirce's about doubt. Doubt is an irritation that motivates engagement in some means of fixating belief.

\textsuperscript{127} Provided that $q$ is not positively undesirable to $s$. 

132
**Volitive**

(19) If $s$ desires $o$ but $s$ doubts $\phi$-ing is the best way to get $o$ and believes that $\phi$-ing is not the best way to get anything else that $s$ desires, then $s$ either will be indisposed or will have an inhibited disposition to try to $\phi$.

**Self-ascriptive**

(20) If $s$ doubts that $p$, and entertains the proposition that she doubts that $p$, $s$ will typically come to believe that she doubts that $p$ without the aid of conscious inference.

**Assertive**

(21) If $s$ doubts that $p$, then $s$ tends not to say, assert, insist, affirm, or avow that $p$ when asked by a friend and in a mood to answer sincerely and when unafraid that the answer will mislead or offend, and tends instead *hedgingly* to say, assert, or affirm that not-$p$.\(^{128}\)

(22) If $s$ doubts that $p$, then $s$ is indisposed to assert internally that $p$ when considering some matter on which the truth of $p$ has bearing, but instead hedgingly to affirm that not-$p$.

---

\(^{128}\) To assert $p$ “hedgingly” is to assert the result of modifying $p$ with a “hedge.” Hedges are linguistic expressions that lessen the speaker’s commitment to the sentences that they modify. Consider: “It seems that John is happy.” Here “It seems that” is a hedge that attenuates the speaker’s commitment to the claim that John is happy. Other examples of hedges include “I feel that,” “I’m inclined to think that,” “It’s likely that,” “It’s not unlikely that,” “It wouldn’t be surprising if,” and “It may well be that.”
(23) If $s$ doubts that $p$, then $s$ is indisposed to make internal or public assertions that imply or presuppose $p$.

*Non-assertive Linguistic*

(24) If $s$ desires that $p$ and takes himself to have the right to command $s^*$ to $\phi$, but $s$ doubts $s^*$’s $\phi$-ing is the best way to bring it about that $p$ and believes that $s^*$’s $\phi$-ing is not the best way to bring about anything else that $s$ desires, then $s$ either will be indisposed or will have an inhibited disposition to command $s^*$ to $\phi$.

(25) If $s$ wants to be accountable to $s^*$ for $\phi$-ing, but doubts that she will manage to $\phi$, then $s$ will (normally) be indisposed to promise $s^*$ that she will $\phi$.\(^{129}\)

(26) If $s$ believes that she is in a context where she has the authority to establish relation $R$ between $s^*$ and $s^{**}$ via pronunciation, but $s$ doubts that $s^*$ and $s^{**}$ want to be in relation $R$, then $s$ will be indisposed to pronounce $s^*$ and $s^{**}$ to be in relation $R$.

(27) If $s$ is grateful for $o$ but $s$ doubts that $s^*$ has given $o$ to $s$, then $s$ will be indisposed to express thanks to $s^*$ for $o$.

\(^{129}\) Thought $s$ might promise to try to $\phi$. 
Non-linguistic Behavioral

(28) If \( s \) desires that \( p \) but \( s \) doubts \( \phi \)-ing is the best way to bring it about that \( p \) and believes that \( \phi \)-ing is not the best way to bring about anything else that \( s \) desires, then (even if \( s \) is able to \( \phi \)) \( s \) either will be indisposed or will have an inhibited disposition to \( \phi \).

(29) If \( s \) desires \( o \) but \( s \) doubts \( \phi \)-ing is the best way to get \( o \) and believes that \( \phi \)-ing is not the best way to get anything else that \( s \) desires, then (even if \( s \) is able to \( \phi \)) \( s \) either will be indisposed or will have an inhibited disposition to \( \phi \).

5.3 Decision Weight

Many theorists will want also to include an item concerning a non-linguistic behavioral disposition that has been called “decision weight.” Roughly put, it is the disposition to give a certain weight (or “plausibility” or “probability”) to a proposition when deciding on courses of action to which that proposition is relevant. For example, when I decide whether to pay $25 for trip cancellation insurance, I give a certain weight to the possibility that I’ll have to cancel my trip. Generally, the more weight I give to that possibility, the more I’ll be willing to pay for cancellation insurance. If I highly doubt that I’ll cancel my trip, I’ll be indisposed to pay much for cancellation coverage. If I have only modest doubt that I’ll cancel my trip, I’ll be disposed to pay more.

130 See Kahneman (2011: ch. 29).
Some theorists will want to use a decision-theoretic apparatus to render the idea of decision weight precise. On a naïve version of descriptive decision theory, an agent always chooses an option that maximizes “expected value.” It is assumed that for any agent $s$ there is some “utility” function $u_s$ such that, for any outcomes $O_i$ and $O_j$, $u_s(O_i) = n \times u_s(O_j)$ if and only if $s$ values $O_i$ $n$ times as much as $s$ values $O_j$. The expected value of a prospective action $\alpha$ with (mutually exclusive and jointly exhaustive) potential outcomes $O_{\alpha_1}, \ldots, O_{\alpha_n}$ is the sum of all the utilities of $O_{\alpha_1}, \ldots, O_{\alpha_n}$, weighted by their decision weights. $^{131}$ So where $W_s$ is the function that gives $s$’s decision weight for each potential outcome, the expected value of $\alpha$ is $\sum_{i=1}^{n} u_s(O_{\alpha_i}) \times W_s(O_{\alpha_i})$. To maximize expected value, then, is to choose the option whose potential outcomes have the highest aggregate utility, weighted by decision weight.

Supposing potential outcomes $O_{\alpha_1}, \ldots, O_{\alpha_n}$ of $\alpha$ to be specific enough that, for any proposition $p$, each $O_{\alpha_i}$ either entails $p$ or entails not-$p$, one can redefine the outcome space for $\alpha$ in terms of a given proposition $q$ so that it consists of just two possible outcomes: $O_{(\alpha|q)}$ (the outcome of $\alpha$, given that $q$ is true) and $O_{(\alpha|\neg q)}$ (the outcome of $\alpha$, given that $q$ is false). $^{132}$ The decision weight for $O_{(\alpha|q)}$ (i.e. $W_s(O_{(\alpha|q)})$) will be the total weight (the sum of the weights) of all those outcomes that entail $q$, and the decision weight for $O_{(\alpha|\neg q)}$ will be the total weight (the sum of the weights) of all those outcomes that entail $\neg q$.

$^{131}$ Decision weights are usually scaled to sum to 1. If, for example, there are just two possible outcomes and they have equal weight, then each has a decision weight of 0.5.

$^{132}$ Really what $O_{(\alpha|q)}$ represents is not a specific outcome, but the disjunction of possible outcomes of $\alpha$ given that $q$ is true. And $O_{(\alpha|\neg q)}$ represents the disjunction of possible outcomes of $\alpha$ given that $q$ is false.
that entail not-\(q\). The utilities of \(O_{(a|q)}\) and \(O_{(a|\neg q)}\) are defined as follows. Where \(Q^+\) is the set of all the \(O_{a_i}\) that entail \(q\), \(u_s(O_{(a|q)}) = \sum_{i=1}^{n} u_s(O_{a_i}) \times W_s(O_{a_i})\), for all \(i\) such that \(O_{a_i} \in Q^+\). And where \(Q^-\) is the set of all the \(O_{a_i}\) that entail not-\(q\), \(u_s(O_{(a|\neg q)}) = \sum_{i=1}^{n} u_s(O_{a_i}) \times W_s(O_{a_i})\), for all \(i\) such that \(O_{a_i} \in Q^-\). In other words, we get the utility of \(\alpha\) given \(q\) by restricting the expected value of \(\alpha\) to the (finer-grained) outcomes that entail \(q\), and we get the utility of \(\alpha\) given not-\(q\) by restricting the expected value of \(\alpha\) to the (finer-grained) outcomes that entail not-\(q\). The expected value of option \(\alpha\) can then be expressed: \(u_s(O_{(a|q)}) \times W_s(O_{(a|q)}) + u_s(O_{(a|\neg q)}) \times W_s(O_{(a|\neg q)})\). For a given proposition \(q\), then, an option \(\alpha\) maximizes expected value if and only if, for every alternative option \(\beta\),

\[
 u_s(O_{(a|q)}) \times W_s(O_{(a|q)}) + u_s(O_{(a|\neg q)}) \times W_s(O_{(a|\neg q)}) 
\geq u_s(O_{(\beta|q)}) \times W_s(O_{(\beta|q)}) + u_s(O_{(\beta|\neg q)}) \times W_s(O_{(\beta|\neg q)})
\]

And since \(q\) and not-\(q\) are mutually exclusive and jointly exhaustive, and since decision weights are conventionally scaled so that the weights of exclusive and jointly exhaustive propositions sum to 1, we have: \(W_s(O_{(a|\neg q)}) = 1 - W_s(O_{(a|q)})\) and \(W_s(O_{(\beta|\neg q)}) = 1 - W_s(O_{(\beta|q)})\). So to restate: for a given proposition \(q\), an option \(\alpha\) maximizes expected value if and only if, for every alternative option \(\beta\),

\[
 u_s(O_{(a|q)}) \times W_s(O_{(a|q)}) + u_s(O_{(a|\neg q)}) \times (1 - W_s(O_{(a|q)})) 
\geq u_s(O_{(\beta|q)}) \times W_s(O_{(\beta|q)}) + u_s(O_{(\beta|\neg q)}) \times (1 - W_s(O_{(\beta|q)}))
\]
If (as is conventional) we restrict attention to propositions whose truth is independent of the options available to the agent (propositions that are not made more or less likely depending on what the agent chooses), then for any options \( \alpha \) and \( \beta \),

\[
W_s(O_{(\alpha \mid q)}) = W_s(O_{(\beta \mid q)}).
\]

This allows us to associate decision weights with propositions, and not just with outcomes: \( W_s(q) = W_s(O_{(\alpha \mid q)}) \), for any proposition \( q \) and any option \( \alpha \) such that the truth of \( q \) is independent of \( \alpha \). So, to rewrite once more: for a given proposition \( q \), an option \( \alpha \) maximizes expected value if and only if, for every alternative option \( \beta \),

\[
\begin{align*}
 u_s(O_{(\alpha \mid q)}) \times W_s(q) + u_s(O_{(\alpha \mid -q)}) \times (1 - W_s(q)) \geq u_s(O_{(\beta \mid q)}) \times W_s(q) + u_s(O_{(\beta \mid -q)}) \times (1 - W_s(q))
\end{align*}
\]

We thus get the following consequence, given the decision theorist’s assumption that a subject \( s \) always chooses an option that maximizes expected value:

(DW) If a subject \( s \) has a decision weight of \( n \) for \( q \), then for any option \( \alpha \), \( s \) is disposed to choose \( \alpha \) whenever, for every alternative option \( \beta \),

\[
\begin{align*}
 u_s(O_{(\alpha \mid -q)}) \times (1 - n) > u_s(O_{(\beta \mid q)}) \times n + u_s(O_{(\beta \mid -q)}) \times (1 - n).
\end{align*}
\]

There will be more to say about (DW) later on when we come to degrees of doubt. At present our concern is with the qualitative notion of doubt. And here we can say that
doubt that something is the case is associated with having a low decision weight for a proposition. If I doubt that I will be cancelling my trip, I give a low decision weight (less than 0.5, anyway) to the proposition that I’ll be cancelling my trip. So we should focus at present on a restriction of (DW) to low decision weights, which yields the following generalization:

\[(DW_L) \text{ If } s \text{ doubts that } p, \text{ then there is some value } n < 0.5 \text{ such that for any option } \alpha, s \text{ is disposed to choose } \alpha \text{ whenever, for every alternative option } \beta, u_s(O(\alpha|q)) \times n + u_s(O(\alpha|\neg q)) \times (1 - n) \geq u_s(O(\beta|q)) \times n + u_s(O(\beta|\neg q)) \times (1 - n).\]

It is tempting to add \((DW_L)\) to (1)-(29). But there are (at least) three problems. First, the function \(u_s\) was said to represent the amount of value that a subject places on an outcome, and \(u_s\) was defined according to the assumption that a subject can value one outcome some number \(n\) times as much as another outcome. But though we surely value some things more than others, it is not obvious that there is ever any answer to the question “How much more do you value this than that?” or “How many times as much do you want this as you want that?” It is not obvious, that is, that desiring, valuing, caring about, and the like admit of \textit{interval-level} and \textit{ratio-level measurement}. We can perhaps assign ranks to the things we care about—placing them in order of priority. But there are infinitely many assignments of numbers to ranked items that respects their rankings. What is not clear is whether there are assignments that are privileged in virtue of respecting the number of times one item is valued more than another. And without such
a privileged assignment (i.e. without ratio-level measurement), $u$, as defined above fails to refer.

A second problem in the present context is a version of the circularity problem discussed in Chapter 1 (§6). We want to look to (DW) for a disposition in terms of which to understand doubt. But (DW) adverts to degrees of “utility”—typically understood as degrees of desiring or valuing. But if (as noted in the previous chapter) an account of desire that does not advert to belief is unpromising, surely the same goes for an account of degrees of desire that does not advert to degrees of confidence and doubt. So here, too, we have a circularity problem.

Third, according to the naïve descriptive decision theory from which (DW) springs, agents (real agents, not just ideal ones) always choose the option that maximizes expected value. Even if there is a notion of utility by which to make sense of that claim, the claim is so strong as to be laughable. Real human agents clearly don’t always maximize expected monetary value in their decisions. And although some of these anomalies can be chalked up to a nonlinear function from monetary values to utilities (the first $1$ million is worth more to you than the second), others represent failures to maximize expected value on any monotonic (order-preserving) function from monetary values to utilities. For instance, even high-profile economists have “failed” variants on the following test: choose between (A) a 100% chance of receiving $1$ million and (B) a 90% chance of receiving $1.5$ million, and choose between (C) a 40% chance of receiving $1$ million and (D) a 30% chance of receiving $1.5$ million. Respondents often choose (A) and (D). But that package of choices represents a failure to maximize expected value no matter how money is valued, as long as more money is preferred to
less. Real agents thus demonstrably fail to maximize expected value. And some theorists have argued that even ideal agents would not maximize expected value, but would instead choose options whose worst outcomes are the least bad. Actual human agents may well do the same in a wide range of situations.

One way around the first of these three problems is to modify decision theory to allow a multiplicity of assignments of numbers to valuations without privileging any

133 An agent $s$ maximizes expected value with (A) only if

$$(A') \quad u_s(\$1 \text{ million}) \geq u_s(\$1.5 \text{ million}) \times 0.9 + u_s(\$0) \times 0.1.$$ 

Equivalently, an agent $s$ maximizes expected value with (A) only if

$$(A'') \quad u_s(\$1 \text{ million}) \times 0.4 + u_s(\$1 \text{ million}) \times 0.6 \geq u_s(\$1.5 \text{ million}) \times 0.6 + u_s(\$1.5 \text{ million}) \times 0.3 + u_s(\$0) \times 0.1$$

And an agent $s$ maximizes expected value with (D) only if

$$(D') \quad u_s(\$1 \text{ million}) \times 0.4 + u_s(\$0) \times 0.6 \leq u_s(\$1.5 \text{ million}) \times 0.3 + u_s(\$0) \times 0.7$$

Equivalently, an agent $s$ maximizes expected value with (D) only if

$$(D'') \quad u_s(\$1 \text{ million}) \times 0.4 + u_s(\$0) \times 0.6 \leq u_s(\$1.5 \text{ million}) \times 0.3 + u_s(\$0) \times 0.6 + u_s(\$0) \times 0.1$$

Or, cancelling $u_s(\$0) \times 0.6$ from both sides, an agent $s$ maximizes expected value with (D) only if

$$(D'''') \quad u_s(\$1 \text{ million}) \times 0.4 \leq u_s(\$1.5 \text{ million}) \times 0.3 + u_s(\$0) \times 0.1$$

But notice that the left-hand side of $(D''''')$ duplicates the first term on the left-hand side of $(A'')$ and that the right-hand side of $(D''''')$ duplicates the last two terms on the right-hand side of $(A'')$. So for $(A'')$ to hold, it must be that

$$(A''') \quad u_s(\$1 \text{ million}) \times 0.6 \geq u_s(\$1.5 \text{ million}) \times 0.6$$

In that case $u_s(\$1 \text{ million})$ must be at least as great as $u_s(\$1.5 \text{ million})$. But that violates the assumption that more money is preferred to less money. And that assumption surely holds even for people as little preoccupied with their own holdings as the theorists that Allais trapped with his now-famous paradox. See Kahneman (2011: ch. 29).

134 This decision rule is known as the “maximin” rule, since it enjoins maximizing the minimum possible utility. The maximin principle plays a crucial role in Rawls (1971), where it is argued that agents in the Original Position should employ the maximin strategy for constructing the social order.
The prediction will then be that human agents choose an option \( \alpha \) whenever \( \alpha \) maximizes expected value no matter what function is used to assign numbers to the agent’s valuations of outcomes, provided the function respects the order in which the agent ranks the options. This approach will still yield some interesting substantive claims about the dispositions of doubters, such as

\[(DW^*) \text{ If } s \text{ doubts that } p, \text{ then for any option } \alpha, s \text{ is disposed to choose } \alpha \text{ whenever, for every alternative option } \beta, s \text{ (strictly) prefers } O(\alpha|\neg p) \text{ to } O(\beta|\neg p) \text{ or is at least indifferent between them, and } s \text{ prefers } O(\alpha|\neg p) \text{ to } O(\beta|p) \text{ or is at least indifferent between them.}\]

135 Another is to define both utility and decision weight at once in terms of the subject’s preferences. See Savage (1954) for a way of doing this. However, there are serious problems with this “representation theorem” approach when it comes to representing the cognitive and conative states of non-ideal agents like ourselves. For one thing, Savage’s approach requires agents’ preferences to be transitive, and real human agents often fail to satisfy that requirement. See Eriksson and Hájek (2007) and Meacham and Weisberg (2011) for criticism of the representation theorem approach.

136 Proof: Let \( \alpha \) and \( \beta \) be arbitrary options, \( W \) be an arbitrary decision-weight function such that \( 0 \leq W(p) < 0.5 \), and let \( u \) be an arbitrary utility function on which \( u(O(\alpha|\neg p)) > u(O(\beta|\neg p)) \), \( u(O(\alpha|p)) \geq u(O(\beta|p)) \), and \( u(O(\alpha|\neg p)) \geq u(O(\beta|\neg p)) \). What needs to be shown is that \( \alpha \) has higher expected value, relative to \( u \) and \( W \), than does \( \beta \). That is, it must be shown that \( u(O(\alpha|\neg p)) \times W(p) + u(O(\alpha|\neg p)) \times (1 - W(p)) > u(O(\beta|\neg p)) \times W(p) + u(O(\beta|\neg p)) \times (1 - W(p)) \). The proof proceeds as follows:

\begin{align*}
(1) & \quad u(O(\alpha|\neg p)) \geq u(O(\beta|\neg p)) \quad \text{[Given]} \\
(2) & \quad u(O(\alpha|\neg p)) - u(O(\beta|\neg p)) \geq u(O(\alpha|\neg p)) - u(O(\alpha|p)) \quad \text{[1, algebraic manipulation]} \\
(3) & \quad u(O(\alpha|\neg p)) \geq u(O(\beta|p)) \quad \text{[Given]} \\
(4) & \quad u(O(\alpha|\neg p)) - u(O(\alpha|p)) \geq u(O(\beta|p)) - u(O(\alpha|p)) \quad \text{[3, alg. man.]} \\
(5) & \quad u(O(\alpha|\neg p)) - u(O(\beta|\neg p)) \geq u(O(\beta|p)) - u(O(\alpha|p)) \quad \text{[2, 4]} \\
(6) & \quad u(O(\alpha|\neg p)) > u(O(\alpha|p)) \quad \text{[Given]} \\
(7) & \quad (u(O(\alpha|\neg p)) - u(O(\beta|\neg p))) \text{ is positive} \quad \text{[1, 6]} \\
\end{align*}
(DW*) will have limited applicability. Particular outcomes are the basic objects of the preferences that shape our decisions. But rarely is there a particular outcome of an action \( \alpha \) given a proposition \( p \); normally there are many possible outcomes. True, we have seen above how to construct utilities for disjunctions of outcomes out of the utilities for their disjuncts. But notice that the construction made use not only of the ordering of the component utilities, but also of their magnitudes. So the problem of quantifying utilities arises for (DW*) at the level of constructing the disjunctive outcomes that are the objects of preference in (DW*). Without a resolution of that problem, (DW*) will apply only to two kinds of cases, both rare: (i) cases where a subject conceives each option as having a single possible outcome given the proposition in question and a single possible outcome given the denial of that proposition, and (ii) cases where the subject prefers

\[0 \leq W(p) < 0.5 \] [Given]

\[(1 - W(p)) > W(p) \geq 0 \] [8]

\[(u(O_{(a - p)}) - u(O_{(b - p)})) \times (1 - W(p)) > u(O_{(b' - p)}) - u(O_{(a' - p)}) \times W(p) \] [5, 7, 9]

\[(u(O_{(a - p)})) \times (W(p)) + (u(O_{(b - p)})) \times (1 - W(p)) + (u(O_{(a - p)})) - u(O_{(b' - p)}) \times (1 - W(p)) > \]
\[u(O_{(a' - p)})) \times (W(p)) + (u(O_{(b' - p)})) - u(O_{(a' - p)}) \times (W(p)) + (u(O_{(b - p)})) \times (1 - W(p)) \] [10, alg. man.]

\[(u(O_{(a - p)})) \times (W(p)) + (u(O_{(b - p)})) \times (1 - W(p)) >\]
\[(u(O_{(a - p)})) + (u(O_{(b' - p)})) \times (W(p)) + (u(O_{(b' - p)})) \times (1 - W(p)) \] [11, alg. man.]

\[(u(O_{(a - p)})) \times (W(p)) + (u(O_{(a - p)})) \times (1 - W(p)) > (u(O_{(b' - p)})) \times (W(p)) + (u(O_{(b' - p)})) \times (1 - W(p)) \] [12, alg. man.] –Q.E.D.
some member of the one set of outcomes to some members of the other set of outcomes in question and not vice versa.\textsuperscript{137}

Still, some such cases are not too extraordinary. Suppose that for some \( q \), you think that, regardless of what else happens, your life will be better if \( q \) is the case.\textsuperscript{138} And suppose someone who is able to make \( q \) the case offers to do so if you correctly answer one question: whether \( p \) is true or false. You prefer all the outcomes of saying “True,” given that \( p \) is true, to any outcome of saying “False”, given that \( p \) is true.\textsuperscript{139} And you prefer all the outcomes of saying “False,” given that \( p \) is false, to any outcome of saying “True,” given that \( p \) is false. You are indifferent between saying “True,” given that \( p \) is true, and saying “False,” given that \( p \) is false. And you are indifferent between saying “False,” given that \( p \) is true, and saying “True,” given that \( p \) is false. By (DW*), then, if you doubt that \( p \), you will be disposed to answer “False.” So as a special case of (DW*), we have

\[
\text{(DW**) If } s \text{ doubts that } p \text{ and prefers } q \text{ to not-} q \text{ regardless of what else happens, then } s \text{ is disposed to choose letting } q \text{ ride on not-} p \text{ over letting } q \text{ ride on } p.\]

\textsuperscript{137} If I prefer some possible outcome of \( \alpha \) given \( p \) to some possible outcome of \( \beta \) given \( p \) and not vice versa, then every admissible utility function will be such that my constructed utility for \( O_{(\alpha|p)} \) will be greater than my constructed utility for \( O_{(\beta|p)} \).

\textsuperscript{138} Maybe \( q \) is that you get the chance to meet your sports hero, or that you get a chance to apologize to a friend whom you’ve wronged, or that you get to have one dance with your celebrity crush, or that you die surrounded by loved ones.

\textsuperscript{139} For simplicity’s sake we’ll leave aside the option of saying neither “True” or “False.”
The second problem mentioned above—the circularity problem—can be addressed by employing the strategy promoted in Chapter 1—viz. to understand decision weight in terms of \textit{occurrent} degree of desire or valuation or preference. I do not think that strategy is likely to yield an answer to the problem just addressed, because I doubt intensities of occurrent desire admit of ratio-level measurement.\textsuperscript{140} But intensities of phenomenal states generally do admit of ordering, so we could at least employ (DW\textsuperscript{*}) and (DW\textsuperscript{**}) and understand the preferences involved to be conscious states of preferring one thing to another.

(DW\textsuperscript{**}) manages to sidestep the third issue raised above. Suppose I am not an expected value maximizer, but rather a follower of the minimax principle: I always choose that option whose worst potential outcome is the least bad. (DW\textsuperscript{**}) is compatible with minimaxing. Whether I let \(q\) ride on \(p\) or I let \(q\) ride on not-\(p\), the worst outcome is that \(q\) fails to be the case. So either choice satisfies the minimax principle. And although one could of course imagine a human being who does not adhere to (DW\textsuperscript{**}), such an individual would be an oddity. (DW\textsuperscript{**}) thus seems to be as good a generalization about doubt as any of (1)-(29).

Whether the same can be said of the more general (DW\textsuperscript{*}) turns on whether expected value can be quantified or merely compared. Since it is such a difficult and controversial question, I have suggested ways of sidestepping it, rather than trying to settle the question. But suppose our desires and preferences \textit{are} measurable on a ratio scale. Then we can each be described by a utility function in such a way that preferences

\textsuperscript{140} Though see Luce (1956) for an intriguing approach to ratio-level measurement of occurrent preferences.
between disjunctive outcomes will emerge from the utilities of their disjuncts (in the way indicated above). But then you might prefer \( O(\alpha \mid \neg p) \) to \( O(\beta \mid p) \) and \( O(\alpha \mid p) \) to \( O(\beta \mid \neg p) \) in virtue of having a mix of very high and very low utilities for the disjuncts of \( O(\alpha \mid \neg p) \) and \( O(\alpha \mid p) \), while having moderately low utilities for all the disjuncts of \( O(\beta \mid p) \) and \( O(\beta \mid \neg p) \).

In that case, if you’re also a minimaxer, you’ll be disposed to play it safe and choose \( \beta \) to avoid the possibility of one of the very bad disjuncts in \( O(\alpha \mid \neg p) \) and \( O(\alpha \mid p) \). There remains a danger, then, that the more general (DW*) will fail, even though the special case (DW**) is pretty safe. I therefore propose to leave (DW*) aside and add (DW**) to (1)-(29). Let’s rename it “(30),” though, for consistency of reference. Thus:

\[
(30) \quad \text{If } s \text{ doubts that } p \text{ and prefers } q \text{ to not-} q \text{ regardless of what else happens, then } s \text{ is disposed to choose letting } q \text{ ride on not-} p \text{ over letting } q \text{ ride on } p.
\]

And although 30 is a nice, round number, I think it worthwhile adding one more item of common knowledge about doubt that captures something of the idea of decision weight. There are circumstances in which a subject aims to maximize expectation for some quantity. A professional gambler might aim to maximize expected monetary value in his decisions at the table. A mutual fund manager might aim to maximize expected monetary value in her investment decisions. These subjects will tend to weight some potential outcomes differently than others, and the weights often can be quantified or at least associated with a narrow range of values. A gambler might, for instance, calculate the probability that his opponent has a certain combination of cards. The probability then serves as his decision weight for that possibility. A mutual fund manager might know
that a certain prospect (e.g. a merger) is highly likely, even if a precise probability can’t be assigned. She’ll then choose an option with the highest expected monetary value for any assignment of a high decision weight to the prospect in question. It is not that such agents typically perform an expected value calculation, though sometimes they will do so. But it is quite plausible that they employ heuristics that approximate expected value calculation and that involve some rough assignment of decision weight.

So I propose to include also:

\( (31) \) If \( s \) doubts that \( p \), then there is some interval of values \([m, n]\) where \( 0 \leq m \leq n < 0.5 \) such that, for any option \( \alpha \), \( s \) is disposed to choose \( \alpha \) when \( s \) is trying to maximize expectation for some quantity \( \mu \) and when, for every alternative option \( \beta \) and every \( k \) such that \( m \leq k \leq n \),

\[
\mu_s(O_{(\alpha|p)}) \times n + \mu_s(O_{(\alpha|\neg p)}) \times (1 - n) \geq \\
\mu_s(O_{(\beta|p)}) \times n + \mu_s(O_{(\beta|\neg p)}) \times (1 - n).
\]

A little less formally: when you doubt that \( p \) and are trying to maximize expectation for some quantity, there will be some range of low values (a subinterval of \([0, 5)\)) such that you’ll choose options that maximize expectation for the quantity in question no matter which value in that range is used as the decision weight.

5.4 On Behalf of Leniency

It is hard to find among the dispositions referred to in (1)-(31) any that are strictly necessary for doubt. Perhaps (3) the disposition not to treat a proposition as true in reasoning would be one of the best candidates. But even this is not clearly necessary for
doubt. A number of philosophers have discussed the possibility of accepting a proposition as true without believing it.\footnote{See, e.g., van Fraassen (1980), Cohen (1992), and Velleman (2000).} Accepted propositions are treated as true in reasoning, even though the subject may not (or not yet) believe them. And acceptance is generally thought to be compatible, not just with non-belief, but with positively doubting the accepted proposition.

One other candidate for a disposition that is strictly necessary for doubt is (21) the disposition not to assert the proposition but to make hedged assertions of its denial. The first half of this condition—that doubters do not assert outright the things they doubt—is a good candidate for a strictly necessary condition for doubt. But it isn’t a very interesting one—being shared, as it is, by any object that altogether lacks psychological properties—and doesn’t get us anywhere near a necessary and sufficient condition for doubt.

But what about (21) as a whole? Inanimate objects don’t have the disposition to assert hedgingly, so perhaps (21) as a whole would be both necessary and sufficient for doubt.

The trouble is that doubters need not be capable of hedged assertion. We probably don’t even need to resort to science fiction here: many non-human animals that seem capable of doubt do not seem capable of hedged assertions concerning all the things they doubt.\footnote{A number of experiments have been done over the past 20 years that attempt to detect states of uncertainty and even consciousness of uncertainty in non-human animals. See Smith and Schull (1989), Smith et al. (1995, 1997, 1998), Inman and Shettleworth (1999), and Hampton (2001). These experiments involve discrimination tasks and give the animal two primary response options. For example, joystick-trained rhesus monkeys are shown a screen and are required to determine whether the pixels on the screen} Assume (just for the sake of argument) that animal communication

---

\[141\] See, e.g., van Fraassen (1980), Cohen (1992), and Velleman (2000).

\[142\] A number of experiments have been done over the past 20 years that attempt to detect states of uncertainty and even consciousness of uncertainty in non-human animals. See Smith and Schull (1989), Smith et al. (1995, 1997, 1998), Inman and Shettleworth (1999), and Hampton (2001). These experiments involve discrimination tasks and give the animal two primary response options. For example, joystick-trained rhesus monkeys are shown a screen and are required to determine whether the pixels on the screen
sometimes has the force of assertion. And assume further that some animals are capable of conveying uncertainty about the information they transmit. Even granting these things, it is hard to buy the generalization that animals can linguistically represent every proposition they can doubt and, further, are disposed to express doubt (through some analog of hedging) about everything they doubt.

Here again one might think to include linguistic ability in the circumstance of manifestation. But that move isn’t very promising, for the reasons given in Chapter 1, §4.11. Dispositions seem to require relevant capacities, and something more than the bare possibility of being endowed with the capacity to manifest the disposition. Furthermore, beings who essentially lack the relevant capacities seem possible.

Once again the problem generalizes. Just about any disposition that is characteristic of doubt will require some kind of capacity that a doubter could be without. It is for this reason very difficult to find any dubitative dispositions that are strictly necessary for doubt.

---

meet a certain density threshold. The monkeys are rewarded with food for correct answers and given a “timeout” when they answer incorrectly. Once the monkeys get the hang of the task, an opt-out response is added. Whenever this option is selected, a new trial begins immediately; there is no reward and no timeout.

Human subjects who are set this density-discrimination task tend to use the opt-out response when the stimulus is near the threshold. When asked how they decide whether to use the opt-out response, they report that they do so when they “couldn’t tell” or “didn’t know” or were “uncertain.” They evidently monitor their own mental states and choose to opt out when they find themselves to be uncertain whether the pixel density meets the threshold.

What researchers have found is that the response patterns of the monkeys are strikingly similar to those of their human counterparts. Some have concluded that the cognitive process reported by human subjects is occurring also in the monkeys: the monkeys are aware of their own uncertainty and choose to opt out when they find themselves to be uncertain. Others are more cautious about attributing to the animals a higher-order cognizance of their own uncertainty. (See, e.g., Carruthers (2008) and Carruthers and Ritchie (2012).) But it is agreed by all parties to the discussion that the animals’ responses are mediated by states of uncertainty to which the animals are in some way sensitive and use as the basis for their decisions.
Lenient accounts of doubt easily accommodate the fact that it is hard to find strictly necessary conditions for doubt. On lenient dispositionalism, for example, a doubter need only have enough of the dubitative dispositions. We shouldn’t expect to find dispositions that are strictly necessary for doubt, because there may well be no disposition that is strictly necessary for doubt. And we certainly shouldn’t expect to find any set of dispositions that are necessary and jointly sufficient for doubt.

As we saw in Chapter 1, the strict dispositionalist won’t be without a story to tell here, but it will be a less elegant, less straightforward story. Some dubitative dispositions really are strictly necessary for doubt. And although we are able to recognize those dispositions well enough to classify cases, we are not very good at identifying the dispositions to which our classificatory abilities are sensitive.

But this story fails to explain our difficulty classifying doubt dissociation cases. Consider the following case:

A principal investigator for a project is under a lot of pressure to see to it that all the promised work gets done by the deadline. He has several graduate students working under him, some Asian and some Caucasian. He sincerely affirms that each of them will complete her or his assigned tasks in plenty of time to meet the deadline. But he tends to check up on the Caucasian students more frequently than on the Asian students. And (though he hasn’t noticed this) the possibility that one or another of the Caucasian students will fail to complete things on time crosses his mind now and then and causes him to worry, whereas he has no (or
fewer) such episodes concerning the Asian students. Call this person the “Quasi-Egalitarian PI.”

It is just not clear whether to say that the Quasi-Egalitarian PI doubts his Caucasian students will complete their work on time or to say that he doesn’t doubt this. He sincerely affirms that they’ll finish on time and plans accordingly. But he is disposed in a variety of situations to have feelings and exhibit behaviors that are at odds with his reflective take on the matter.

If the strict dispositionalist’s story is correct, then we have a recognitional capacity that is sensitive to the dubitative dispositions that are necessary and sufficient for belief, even though we struggle to identify those conditions. But either the relevant dispositions are present in the Quasi-Egalitarian PI case, or they’re not. If they are, we ought to have no trouble classifying him as a doubter. If they aren’t, we ought to have no trouble classifying him as a non-doubter. Dissociation cases force the strict dispositionalist to complicate the story even further to account for our classificatory difficulties. Lenient dispositionalism is preferable to strict dispositionalism because the former easily and elegantly accommodates what the latter can accommodate only with a great deal of maneuvering.¹⁴³

¹⁴³ Notice I’m not claiming that there’s no story the strict dispositionalist could tell to accommodate cases like the Quasi-Egalitarian PI. In a previous note I mentioned the possibility of saying that we classify cases by means of heuristics and each heuristic is sensitive only to a proper subset of the relevant dispositions. But I also noted that such a move raises the question how such a heuristic enables us to apply the concept of doubt, rather than some partially overlapping concept. I am sure strict dispositionalism can be salvaged by further adjustments to the web of belief. I just don’t think the effort is justified when lenient dispositionalism is available.
And, again, a similar argument applies to other accounts of doubt. Our inability to identify a necessary and sufficient causal role and our difficulties classifying dissociation cases tell against a strict role functionalism, representationalism, or interpretationism, and in favor of lenient versions of these views.

The result is a view on which doubt is vague. There will inevitably be cases where the subject doesn’t clearly possess enough of the relevant dubitative dispositions. And no amount of fleshing out of the cases will settle the question, just as no amount of fleshing out of a borderline case of baldness or blueness or courage will settle the question whether the object is bald, blue, or courageous. Though we tend to focus on clear cases of doubt and clear cases of non-doubt, we need to recognize that there are also borderline cases where in principle we cannot settle the classificatory question.

6. Abundant Dubitative Dispositions

It remains to say something about which dispositions are among those enough of which qualifies a person as doubting. Consider the following series of cases:

(A) Helen affirms that it will be sunny on the day of her wedding. And she uses in her reasoning the premise that it will be sunny on her wedding day: she plans an outdoor wedding and declines tents, umbrellas, and other rainy day arrangements. She is not anxious about the weather on her wedding day (and strongly desires that it not rain that day). And she is not disposed to be surprised to see a clear, blue sky the morning of her wedding.
(B) Ben affirms that it will be sunny on the day of his wedding. And he uses in his reasoning the premise that it will be sunny on his wedding day. He is not anxious about the weather on his wedding day (while desiring that it not rain that day). However, Ben is disposed to be somewhat surprised to see a clear, blue sky the morning of his wedding.

(C) Carla affirms that it will be sunny on the day of her wedding. And she uses in her reasoning the premise that it will be sunny on her wedding day. But she is anxious about the weather on her wedding day. And she is disposed to be (pleasantly) surprised to see clear, blue skies on the morning of her wedding.

(D) Hugh affirms that it will be sunny on his wedding day. But in his reasoning he doesn’t use the premise that it will be sunny on his wedding day; he takes the prospect of rain into account in his planning. He is anxious about the weather on his wedding day. And he is disposed to be (pleasantly) surprised to see clear, blue skies on the morning of his wedding.

(A) and (D) are clear cases. Helen clearly doesn’t doubt that it will be sunny on her wedding day. Hugh clearly does doubt that it will be sunny on his wedding day; either his affirmations are disingenuous, or he is self-deceived. (B) and (C) are harder cases, and (C) is the hardest of the bunch.
Many similar series could be constructed using other dispositions that feature in (1)-(29). And we would see the same pattern. The clear cases of doubt will be the cases where the subject has several dubitative dispositions and lacks few or no dubitative dispositions. The hard cases will be the cases where the subject has several dubitative dispositions and lacks several others.\footnote{As in the case of belief, there is reason to think the mental dubitative dispositions count for more than the physical and that the dispositions one is incapable of having are irrelevant to whether one doubts. If one is physically disposed like a believer that $p$ and one is mentally disposed like a doubter that $p$, then one is a doubter, not a believer and not a borderline case. So the physical dubitative dispositions carry much less weight than the mental dubitative dispositions (if the physical carry any weight at all).}

The best account of doubt, then, is a lenient dispositionalism (or role functionalism or representationalism or interpretationism) on which doubt is not some neurophysiological property distinct from and underlying the dubitative dispositions, but is a matter of having enough of the dubitative dispositions one is capable of having (where the mental count for more than the physical, if the latter count at all). There can be borderline cases of doubt where it is unclear whether the subject possesses enough of the relevant dispositions. And that is how some of the hardest dissociation cases are to be accounted for: they are borderline cases in which it is just not clear whether the subjects possess enough of the relevant dubitative dispositions.

7. Degrees of Doubt

Our account is still lacking one very important element: a treatment of degrees of doubt. We doubt some things more than others, and the degree of our doubt makes a difference to our dispositions. If I am just slightly doubtful that the Broncos won the
game last night, I’ll make a mildly hedged assertion that they won—e.g. “I think the Broncos won last night.” If I very much doubt the Broncos won, I just won’t assert they won (not even with a hedge). If I have just a little doubt that I turned off the stove before leaving the house, I’ll be slightly anxious about it. If I have quite a bit of doubt, I’ll be very anxious and will return home as soon as possible to make sure the stove is off.

We have a number of locutions that express degrees of doubt. Consider the following fragments:

(i) I very much doubt that….

(ii) You have a little bit of doubt that….

(iii) We are somewhat doubtful that….

(iv) She doubts that…more than he does. (e.g. She doubts that their marriage will last more than he does.)

(v) He doubts that…more than he doubts that…. (e.g. He doubts that it will snow tomorrow more than he doubts that it will rain tomorrow.)

(i) uses “doubt” as a verb and modifies it with an adverb of degree. (ii) uses “doubt” as a mass noun with a quantifier. (iii) uses the predicate adjective “doubtful” and modifies it with an adverb of degree. (iv) and (v) are comparative constructions. (iv) makes an intersubjective comparison with respect to a single proposition. (v) makes an interpropositional comparison with respect to a single subject.

We have an account of what it is for a person to doubt a proposition. But what is it for a person to doubt a proposition very much? Or to doubt one proposition more than another? Or to doubt a proposition more than another person does?
It will be useful to compare degrees of doubt with degrees of virtue or education or health. We can describe a person simply as “virtuous,” “educated,” or “healthy.” But we can also add degree modifiers: “moderately virtuous,” “highly educated,” “very healthy.” And we can form comparatives: “more virtuous than,” “less educated than,” “healthier than.”

Virtue, education, and health are like doubt in that they are correctly attributed when the subject has enough of the relevant (mostly causal or dispositional) characteristics. A virtuous person need not have every virtue, but must have enough. An educated person need not be knowledgeable in every subject, but must be knowledgeable in enough of the relevant subjects. A healthy organism can have a few deficiencies, but must function well in most other respects.

Actually matters are somewhat more complicated. Suppose that Trudy is moderately knowledgeable across the disciplines, though not an expert in anything. And suppose Ursula is extremely knowledgeable in the humanities (much more so than Trudy), but not very knowledgeable, though not entirely ignorant, in the sciences. Both are educated—indeed, both are quite educated. But while Trudy is educated in virtue of extreme breadth of knowledge, Ursula combines moderate breadth with a higher degree of knowledgeability in certain subjects.\footnote{Sherlock Holmes is an interesting case of this sort. In \textit{A Study in Scarlet}, Watson reports, “His ignorance was as remarkable as his knowledge. Of contemporary literature, philosophy and politics he appeared to know next to nothing....My surprise reached a climax, however, when I found incidentally that he was ignorant of the Copernican Theory and of the composition of the Solar System.” Most people who are so massively ignorant of literature, philosophy, politics, and astronomy would be clearly uneducated. But Sherlock is so extraordinarily knowledgeable in chemistry, physiology, anthropology, and other domains that he makes for a harder case.}
Virtue, education, and health each have many “components,” and whether a person is virtuous, educated, or healthy depends on (a) the number of components she possesses and (b) degrees within the components. And whether one person is more virtuous, more educated, or healthier than another also depends on both the number of components possessed and degrees within the components. John may be more virtuous than Ivan by possessing a larger number of the virtues, where John and Ivan possess each virtue on which they overlap in roughly the same degree. Perhaps Ivan is courageous and just, but John is (equally) courageous and just, but also temperate and compassionate. But even if John and Ivan possess all the same virtues, John could still be more virtuous than Ivan by possessing some virtues in a higher degree than Ivan does. Perhaps they are both courageous, just, temperate, and compassionate, but John is much more courageous than Ivan and equally just, temperate, and compassionate.

If degrees of doubt are like degrees of virtue, education, and health, then there should be two factors that determine degree of doubt: number of dubitative dispositions and degrees within the dubitative dispositions. But it turns out that things work a bit differently with degree of doubt. Consider the following case:

Miriam and Nelson have somewhat different dispositions with respect to the proposition that the weather will be dry on their wedding day. They are both

146 It may be possible to construct cases like that of Trudy and Ursula for health and virtue. But it takes some care to construct such cases for health, since the functions of an organism tend to hang together. Most of the organs of animal bodies depend on each other so that morbidity in one tends to produce morbidity in the others. And when it comes to virtue, one must grapple with the idea (associated with Socrates, Plato, Aristotle, and the Stoics) of the unity of the virtues—roughly, the idea that the virtues hang together in such a way that it is difficult or impossible to have some but not others.
disposed to take the possibility that it won’t be dry into account in their wedding preparations (they’ve rented tents and umbrellas and the like). And they are both anxious about the weather on their wedding day. However, while Miriam is disposed, when asked about the weather on their wedding day, sincerely to assert with modest hedging that it will not be dry (“I tend to think it won’t be dry”), Nelson is disposed sincerely to assert that it will be dry. And while Miriam is disposed to be somewhat surprised to see clear blue skies on the morning of their wedding, Nelson is not disposed to feel any surprise at seeing clear skies on the wedding morning.

Miriam is a straightforward case of moderate doubt. Nelson, however, is a strange dissociation case. It is just not clear whether to regard him as doubting (moderately) that it will be dry on the wedding day or to regard him as believing that it will be dry. Significantly, it is not that Nelson’s lack of certain dubitative dispositions makes him a clear case of mild doubt. It doesn’t make him a clear case of doubt at all (nor a clear case of non-doubt).

If doubt attribution functioned the way virtue, education, and health attribution do, then Nelson should be regarded as having a lower degree of doubt than Miriam. He would in fact be a clear case of being less doubtful than Miriam. But he is not. He in some ways seems equally doubtful and in other ways seems much less doubtful. He is a hard dissociation case, rather than a clear case of mild doubt. So doubt attribution does not function quite like virtue, education, and health attribution.
But there is a way in which doubt attribution is like virtue, education, and health attribution. The components of doubt—the relevant dubitative dispositions—do admit of degrees (or at least many of them do), and these degrees do bear on the subject’s degree of doubt. Consider this case:

Taylor and Casey have much the same dispositions with respect to the proposition that the weather will be dry on their wedding day, though there are differences of degree. Taylor is disposed, when asked about the possibility of dry weather on the wedding day, to say, “It may not be dry.” Casey is disposed to say, “It probably won’t be dry.” Taylor is willing to pay an extra $1,000 in advance for tents and umbrellas (if they must be reserved in advance), though if they wake up to rainy weather on the day of the wedding, Taylor would be willing to pay up to $3,000 for tents and umbrellas. Casey would (like Taylor) be willing to pay up to $3,000 upon finding it rainy the morning of the wedding, but Casey would be willing to pay $2,000 in advance if same-day arrangements aren’t possible. Taylor is disposed to be mildly surprised to see dry, sunny weather on the morning of the wedding. Casey is disposed to feel very surprised to see dry, sunny weather on the wedding day.

There is a clear difference in Taylor and Casey’s degrees of doubt: Casey is more doubtful that the weather will be dry than Taylor is. But there is no difference in which dispositions Taylor and Casey possess. The difference comes down to differences in the degrees of the manifestations of those dispositions. Taylor is disposed to engage in
stronger hedging than Casey. Casey is disposed to feel more surprised than Taylor. And so on.

As noted above, the Miriam/Nelson case is a dissociation case. It is not a clear case of one subject’s being more doubtful than another is. There are some respects in which Miriam seems more doubtful than Nelson and other respects in which they seem equally doubtful. Some of the latter would need to be changed if we are to get a clear case in which Miriam is more doubtful than Nelson. Miriam will clearly be more doubtful than Nelson only if there are sufficiently many dubitative dispositions on which Miriam is disposed to a higher degree of manifestation than Nelson is. If to doubt that \( p \) is to have enough of the relevant dubitative dispositions, then \( s \)’s being more doubtful than \( s^* \) that \( p \) would presumably be a matter of \( s \)’s being disposed to higher degrees of manifestation of sufficiently many dubitative dispositions.

This can be stated more formally to make sure the idea is clear. Let \( D_1, \ldots, D_n \) be the dubitative dispositions whose degrees are constitutive of the degree to which a person doubts a proposition. For any \( i \ (1 \leq i \leq n) \), let \( RDS_i \) be the relation that holds between a subject \( s_1 \), a subject \( s_2 \), and a proposition \( p \) whenever \( s_1 \) has a higher degree of \( D_i \) with respect to \( p \) than \( s_2 \) has. So if \( D_j \) is the disposition to hedge one’s assertions, then \( RDS_j(\text{me, you, } p) \) whenever I am disposed to hedge my assertions that \( p \) more heavily than you are.

In terms of \( RDS \)-relations, then, the idea just proposed is:

\[
\text{CDS} \quad s_1 \text{ doubts that } p \text{ more than } s_2 \text{ does if and only if there are sufficiently many (integer) values } i \text{ in the interval } [1, n] \text{ for which } RDS(s_1, s_2, p).
\]
And a similar account can be given for intrasubjective, interpropositional comparisons. Where $D_1, \ldots, D_n$ are the dubitative dispositions whose degrees are constitutive of the degree to which a person doubts a proposition and where, for any $i \ (1 \leq i \leq n)$, $RDP_i$ holds between a subject $s$, a proposition $p$, and a proposition $q$ whenever $s$ has a higher degree of $D_i$ with respect to $p$ than with respect to $q$,

\[ \text{CDP} \quad s \text{ is more doubtful that } p \text{ than that } q \text{ if and only if there are sufficiently many (integer) values } i \text{ in the interval } [1, n] \text{ for which } RDP_i(s, p, q). \]

In other (looser) terms, you’re more doubtful that $p$ than that $q$ if you “score higher” for $p$ than for $q$ on enough dubitative dispositions.

There is of course vagueness in both CDS and CDP—specifically in the term “sufficiently many.” That is as it should be. There will be clear cases of comparative doubt, such as the Taylor/Casey case, and borderline cases of comparative doubt, such as the Miriam/Nelson case.

CDS and CDP are not quite right, however. First, a more minor issue. There are a few dubitative dispositions whose associated degrees have saturation points—levels above which differences in degree aren’t plausibly thought to contribute any further to comparative doubt. If you’re disposed to be shocked at conclusive evidence against $p$, but disposed to be utterly floored by conclusive evidence against $q$, that wouldn’t tempt us to say that you doubt $p$ more than you doubt $q$. After all, you don’t seem to doubt either one. There’s a certain level of surprise such that if you’re disposed to at least that
level of surprise for each of two propositions, then, all else equal, you’re not more
doubtful of one than of the other.

Something similar goes for the decision weights that feature in (31). In general,
the more doubtful you are that \( p \), the lower the decision weight you’ll give to \( p \) when
you’re trying to maximize expectation for some quantity (e.g. wealth). However, if
you’re disposed to give a near-maximal decision weight to \( p \) and an even-nearer-maximal
decision weight to \( q \), that need not tempt us to ascribe more doubt about \( p \) than about \( q \) to
you. You might not employ a maximal decision weight for everyday things like what
your phone number is, but that doesn’t suggest you have doubt about those things—just
that you don’t have quite the certainty that you have about, say, elementary arithmetical
identities. There’s a certain amount of decision weight (perhaps varying with context or
stakes) such that if you’re disposed to give at least that amount of weight to two
propositions, then, all else equal, you’re not more doubtful of one than the other.

Let’s consider CDS and CDP to be amended so as to take saturation points into
account. There remains a more serious issue. Let \( \delta_1 \ldots \delta_{10} \) be levels of hedging—\( \delta_1 \)
being the least hedging, \( \delta_{10} \) being the most. Let \( \varepsilon_1 \ldots \varepsilon_{10} \) be levels of surprise at
conclusive evidence for the proposition doubted—\( \varepsilon_1 \) being the least surprise, \( \varepsilon_{10} \) being the
most. Let \( \zeta_1 \ldots \zeta_{10} \) be intensities of feelings of doubt—\( \zeta_1 \) being the least intense, \( \zeta_{10} \) being
the most. Let \( \eta_1 \ldots \eta_{10} \) be decision weights—\( \eta_1 \) being a weight near 1, \( \eta_{10} \) being a weight
near 0. And let \( \theta_1 \ldots \theta_{10} \) be degrees of inhibition of one’s gladness or distress (depending
on whether the proposition’s truth or falsity is desired)—\( \theta_1 \) being total uninhibitedness,
\( \theta_{10} \) being total inhibition. For the sake of illustration, we’ll suppose these five are all the
relevant dubitative dispositions. We’ll also assume that “sufficiently many” in CDS and CDP means at least four out of five.

Now suppose my dubitative disposition degrees for the propositions \( p \) and \( q \) are as in the table below:

<table>
<thead>
<tr>
<th></th>
<th>( \delta_1 )</th>
<th>( \varepsilon_9 )</th>
<th>( \zeta_9 )</th>
<th>( \eta_9 )</th>
<th>( \theta_9 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( p )</td>
<td>( \delta_2 )</td>
<td>( \varepsilon_2 )</td>
<td>( \zeta_{10} )</td>
<td>( \eta_{10} )</td>
<td>( \theta_{10} )</td>
</tr>
</tbody>
</table>

By CDP, I am more doubtful about \( q \) than about \( p \), since I “score higher” for \( q \) than for \( p \) on four out of five dispositions. But that doesn’t seem quite right. I am a pretty clear case of extreme doubt about \( p \). True, I am somewhat dissociated, having a discordant assertive disposition. But as I score about as high as one can on all the others, it seems we should regard me as highly doubtful that \( p \). Not so for \( q \)! I am pretty deeply dissociated with respect to \( q \)—scoring very high on three out of five dispositions and very low on two out of five. I am neither a clear case of extreme doubt nor a clear case of mild doubt. CDP seems to overreach in declaring me more doubtful about \( q \) than about
Our account of comparative doubt should make better accommodation for my borderline status.¹⁴⁷

The solution, I think, is to recognize that common knowledge about doubt includes items concerning features of certain levels of doubt. There are things we associate with extreme doubt—very low decision weight (close to 0), utter shock at conclusive evidence for the doubted proposition, intense feelings of doubt, and so on. There are things we associate with mild doubt—moderate decision weight (not too close to 1 and not too far from 0.5), moderate surprise at conclusive evidence for the doubted proposition, twinges of felt doubt, and so on. And there are things we associate with the complete absence of doubt—high decision weight, total lack of surprise at conclusive evidence, total absence of felt doubt, and so on. For each of these levels of doubt, we associate certain degrees of the dubitative dispositions, and a subject should not count as attaining that level of doubt without having the associated degrees of enough of those dispositions.

How many levels of doubt are there with which we have specific associations? I think not many. One indication is that in psychological research it is unusual to find Likert scales for level of confidence that include more than two or three degrees of doubt. This suggests that the researchers do not expect subjects to have enough in the way of

¹⁴⁷ One might be tempted to propose averaging the degrees I have of the various dispositions. But, first, the degrees of these dispositions may well be incommensurable. Is the difference between the hedge “I think” and the hedge “perhaps” greater than, less than, or equal to the difference between a decision weight of 0.6 and a decision weight of 0.3? It is not clear there is any fact of the matter. Moreover, averaging would give a definite verdict in every case, and that is exactly what seems wrong with CDP. If we used the numbers in the table, for instance, the unequivocal verdict would be that I am more doubtful about \( p \) than about \( q \). But I don’t seem clearly more doubtful about \( p \) than about \( q \), nor the reverse; I seem to be a borderline case.
differential associations with more than two or three levels of doubt to provide informative responses. But it does seem clear that we associate some levels of some dubitative dispositions with some levels of other dubitative dispositions. We expect mild hedging, twinges of doubt, and dispositions to moderate surprise to hang together. And similarly for a few other sets of dubitative disposition levels.

I propose, then, that we posit a handful of doubt strata, each of which is associated with a smallish range of degrees for each dubitative disposition. We needn’t try to pin down the number of strata, but let’s just say it is probably no fewer than three and probably no more than six or so.

And here’s how I think the stratified account of doubt should go. If I occupy one stratum with respect to a proposition $p$, and you occupy a higher stratum with respect to $p$, then you are more doubtful about $p$ than I am. If we occupy the same stratum with respect to $p$, then one of us might still be more doubtful about $p$ than the other. There are finer discriminations to be made within strata. And those discriminations are to be made in accordance with CDS and CDP. If you are disposed to higher degrees of enough of the dubitative dispositions than I am, but we both have degrees of enough dubitative dispositions that fall within the range of a particular stratum, then you are more doubtful than I am even though we occupy the same doubt stratum.

There are two kinds of borderline cases for comparative doubt. First, I might not clearly occupy different strata with respect to two propositions $p$ and $q$, because with respect to $q$ I don’t clearly have enough and don’t clearly have too few disposition levels that fall within the range associated with a stratum above or below the stratum that I
occupy with respect to \( p \). That is what happens, I think, in the case illustrated above with Table 1.

I pretty clearly occupy a high stratum with respect to \( p \), but don’t clearly occupy a high stratum with respect to \( q \). I am a borderline case of occupying a high stratum with respect to \( q \), but I’m also a borderline case of occupying a low stratum with respect to \( q \). This makes me a borderline case of being more doubtful that \( p \) than that \( q \).

Second, I might clearly occupy a single stratum with respect to both \( p \) and \( q \), but I might have higher levels of some dubitative dispositions with respect to \( p \) than with respect to \( q \) and not others. It might be unclear whether I score higher on enough dubitative dispositions to count as being more doubtful that \( p \) than that \( q \). So there are intrastratal borderline cases, as well as interstratal borderline cases. This completes the account of comparative doubt on which the account of confidence in the next chapter will be based.

8. Contributors to Comparative Doubt

It remains to provide a little more explanation of the degrees of the dubitative dispositions that contribute to degree of doubt. Let’s consider the dubitative dispositions in each cluster.

Cognitive. It is obvious that the more doubtful you are that \( p \), the more doubtful you’ll be about propositions that you take to stand in certain inferential relations to \( p \) (e.g. propositions that entail \( p \)). How degrees of doubt affect one’s tendency to use a proposition as a premise in reasoning is less straightforward. One can of course engage
in purely hypothetical reasoning wherein one supposes \( p \) merely for the sake of argument, and there one’s degree of doubt about \( p \) is irrelevant. But if one reasons in a serious way, sincerely hoping to attain the truth or obtain the good, then one’s degree of doubt will matter. If one has quite a bit of doubt about \( p \), one simply won’t use \( p \) itself as a premise in reasoning. One might use a higher-order proposition, such as that \( p \) is somewhat probable or that there is substantial evidence for \( p \). But only if one’s doubt about \( p \) is very mild might one use \( p \) as a premise in (serious) reasoning. If you are mildly doubtful that \( p \), what you are likely to have is an inhibited disposition to treat \( p \) as a premise in your reasoning. The degree of inhibition will tend to correlate with the degree of doubt, at least up to a point. The more doubtful you are that \( p \), the more inhibited will be your disposition to use \( p \) as a premise in reasoning. But when you have very substantial doubt that \( p \), it seems you won’t have a (highly) inhibited disposition to use \( p \) as a premise in reasoning; rather, you won’t have that disposition at all.\(^{148}\)

It should be added that if you are extremely doubtful that \( p \), then you might use \( \neg p \) as a premise in (serious) reasoning. Though if I’m right that doubt is incompatible with disbelief (see §4.1 above), then someone who is extremely doubtful that \( p \) will have an inhibited disposition to use \( \neg p \) as a premise in reasoning.

**Affective.** Degrees of inhibition also correlate with degrees of doubt in the domain of affective dubitative dispositions. Suppose you purchase tickets for an event from a street vendor. As the time of the event draws near, you begin scrutinizing the

\(^{148}\) I won’t try to say in any precise way where on the doubt spectrum that change occurs. But I think we can at least lay down that when it’s correct to say that you doubt that \( p \) (when you are cognitively opposed to \( p \)), you are not disposed at all to treat \( p \) as true in reasoning (at least under normal psychological conditions). You are inhibitedly disposed to treat \( p \) as true in reasoning only when you have some (but not much) doubt about \( p \).
tickets and wondering whether they might be counterfeit. If you become very doubtful
that the tickets are genuine, you will have an inhibited disposition to be angry at the street
vendor. It’s not that your emotional state is as it would be if you fully disbelieved that
the tickets are genuine. But there is already emotional preparation tending in that
direction. You are inclined toward anger; you feel the beginnings of anger. The anger is
inhibited, and the degree of inhibition correlates, up to a point, with the degree of doubt.
It is an inverse correlation: the more doubtful you become that the tickets are genuine, the
less inhibited your anger will be.

Other affective dubitative dispositions function similarly. If you don’t want p to
be the case, and you doubt that p is the case, you’ll have an inhibited disposition to be
glad that not-p. And the degree of inhibition will depend on your degree of doubt. The
more doubtful you are that p is the case, the less inhibited will be your disposition to
gladness.

But degree of doubt does not correlate with degree of inhibition in all affective
dubitative dispositions. One exception is the disposition to surprise. The more doubtful
you are that p, the more surprised you tend to be upon acquiring conclusive evidence for
p. The relevant degree is the degree of surprise, not the degree of inhibition of the
disposition to feel surprised.

Another exception is the disposition to be worried or afraid when one doubts
something that one takes to be necessary for one’s own or a loved one’s safety, security,
or happiness. The more doubtful you are that you turned off the stove, the more worried,
anxious, or even fearful you are that you didn’t.
Desiderative. There is perhaps no generalization to be made about the relationship between strength of doubt and the degree to which a person desires to eliminate doubt. Perhaps the desire is stronger in you when you feel torn equally between thinking $p$ true and thinking $p$ false, while I tend to be comfortable or resigned in that situation and have little desire for resolution. Perhaps what really drives me to inquiry are small degrees of doubt that put belief just out of reach.

It seems a generalization concerning degree of doubt can be made with respect to the disposition that features in (18). If you desire that $p$ and you doubt that $p$ will be the case if $q$ is not the case, then you will be disposed to desire that $q$. And the more strongly you doubt that $p$ will be the case if $q$ isn’t the case, the stronger your desire for $q$ will tend to be. Suppose Madge wants to make a favorable impression on Kathy and doubts that she can do so if she fails to remember Kathy’s children’s names. Then Madge will want to remember Kathy’s children’s names. And the more she doubts that she can make a favorable impression without remembering the names, the more badly she will want to remember them.

Self-Ascriptive. If you doubt that $p$, and you entertain the proposition that you doubt that $p$, then you will typically come to believe that you doubt that $p$, even without the aid of conscious inference (from, e.g., your behaviors). Doubt is, to a substantial extent, introspectively accessible, and this accessibility grounds dispositions to successfully self-ascribe doubt. Furthermore, our degrees of doubt are, to a significant extent, introspectively discriminable. So the more doubtful you are that $p$, the more doubt about $p$ you will tend to ascribe to yourself upon entertaining the question how doubtful you are about $p$ (even without inferential mediation).
Assertive. As noted above, degrees of manifestation of the disposition to assert hedgingly amount to the weakness of the hedges one is disposed to use. It is characteristic of strongly doubting $p$ to use weak hedges in one’s assertions that not-$p$. Asserting "Pretty clearly not-$p$" manifests a higher degree of doubt about $p$ than asserting "It may well be that not-$p$."

Volatile & Nonlinguistic Behavioral. (19), which deals with volitive dubitative dispositions, doesn’t suggest much concerning how differences in degree of doubt make volitive differences. Desire for a thing typically doesn’t dispose you at all to try doing something when you doubt that the action in question is the best way for you to secure the desired end. Occasionally you might have an inhibited disposition to try doing something for the sake of some desired end, if you merely suspect an alternative means will be more effective. Perhaps your degree of inhibition will correlate, up to a point, with degree of doubt. And something similar might be said for the behavioral manifestations of doubt, both linguistic and nonlinguistic. Doubt about the effectiveness of a means to a desired end might differentially inhibit a disposition to pursue that means or a disposition to command someone else to do something that might secure the end. But the degrees of these inhibitions surely don’t carry much weight in determining a subject’s degree of doubt.

(30) and (31)—the items concerning decision weight—are more promising as sources on the contribution of degree of doubt to volition and action. There is a natural extension of (30) to comparative doubt: if $s$ doubts $p$ more than $q$ and prefers $r$ to not-$r$ regardless of what else happens, then $s$ is disposed to choose letting $r$ ride on $q$ over
letting \( r \) ride on \( p \).\(^{149}\) And there is also a natural extension of (31): if \( s \) doubts \( p \) more than \( q \), then the decision weight \( s \) is disposed to use for \( p \) when trying to maximize expectation for a quantity is lower than the decision weight \( s \) is disposed to use for \( q \).

**Non-assertive Linguistic.** The belief that another’s action will secure for you something you desire, together with the belief that you have authority to command that action, tends to issue in the command. Doubt tends to inhibit that disposition, or destroy it altogether. When the disposition is merely inhibited, there is, plausibly, some correlation between degree of doubt and degree of inhibition.

There are other non-assertive linguistic dispositions for which degree of doubt correlates with degree of indisposition. Suppose I want to be accountable to you for submitting a report by a certain date. The more doubtful I am that I will manage to submit the report by that date, the less disposed I’ll be to promise you that I’ll submit the report by that date. Or suppose I am grateful for an anonymous gift. The more doubtful I am that it was you who sent the gift, the less disposed I’ll be to thank you for the gift.

---

\(^{149}\) An interesting question here is how to extend (30) to comparisons of degree of doubt between subjects. The obvious extension would be: if \( s_1 \) doubts \( p \) more than \( s_2 \) does, and \( s_1 \) and \( s_2 \) both prefer \( r \) to not-\( r \) regardless of what else happens, then \( s_2 \) values letting \( r \) ride on \( p \) more than \( s_1 \) does. Many theorists, however, think the values of different subjects are incommensurable. If that is so, then there is simply no fact of the matter whether I value letting \( r \) ride on \( p \) more than you do. I won’t enter the fray in earnest here. But I’ll say for the record that I am impressed by the argument that commensurability seems to be a precondition for everyday claims about fairness; and as I take many everyday claims about fairness to be true, I am strongly inclined to think intersubjective comparisons of utility must be possible.
9. Taking Stock

We now have a substantial account of doubt—a good deal more substantial than any in the existing literature. To doubt a proposition isn’t to have some particular physiological property; it is to have enough of the relevant dispositions (or a property with enough of the relevant causal powers, etc.). And for one person to doubt a proposition more than another person isn’t for the first to have more of some particular degreed property than the latter has. Rather, it is for the two people to occupy different doubt strata with respect to that proposition, which happens when each is disposed toward enough stratum-specific degrees of the properties that manifest doubt. Or, one person might occupy the same doubt stratum with respect to a proposition as another person, but the one is disposed toward higher degrees of enough of the relevant dispositions than the other is. “Enough” is vague, however, so there can be borderline cases of doubt, and there can be borderline cases of comparative doubt. This vagueness explains the difficulty classifying at least some of the cases in which a subject’s dubitative dispositions are dissociated.

We have also seen how the main types of doubt-ascribing locutions are related to each other. To say that a person “has doubt” that $p$ is noncommittal about the degree of doubt. But a quantifier can be added to indicate the degree. To say that a person “doubts” that $p$ is to say that the person favors not-$p$ over $p$ or leans toward not-$p$—she does not doubt not-$p$ more than she doubts $p$. But to say that a person “has doubts” about $p$ is to say, not only that the person doubts $p$, but that the person doubts $p$ for some particular reasons. Doubts are reasons for which one doubts.
We have also seen that occurrent doubt needs to be distinguished from dispositional doubt. And dispositional doubt needs to be distinguished from the mere disposition to doubt. It is an open question just how the latter distinction is to be drawn. But the task is clear enough: one needs to identify, on the one hand, processes in which existing dubitative dispositions are directly manifest in cognition, affect, volition, and behavior and, on the other hand, processes in which dubitative dispositions are acquired on the way to some manifestation.

Finally, we have seen reason to deny that disbelief is a kind of doubt and reason to think doubt is intimately connected with suspension of judgment. Doubt is an unsettled state, whereas disbelief is (at least temporarily) settled. Suspension of judgment is also an unsettled state, and it is difficult if not impossible to imagine cases of suspension of judgment that are not cases of doubt or vice versa.

Our account of doubt is substantial enough to use it as a foundation for an account of confidence. That task will be taken up in the next chapter. With accounts of belief and confidence in hand, we will be able to assess the Threshold View.
1. Introduction

We now have an account of belief and an account of doubt. The account of doubt will be extended in this chapter to provide an account of confidence. This account of confidence, together with our account of belief, will provide the materials that are needed to assess the Threshold View.

2. Confidence and Doubt: Preliminary Argument

It is tempting, because simple and straightforward, to hold that doubt and confidence are just two sides of the same coin. You doubt that \( p \) to the extent that you lack confidence that \( p \). You are confident that \( p \) to the extent that you lack doubt that \( p \). There is just one degree of mental state here. We call it “confidence” when in a glass-half-full mood; we call it “doubt” when in a glass-half-empty mood.

A slightly weaker variant on this view is that degrees of doubt and degrees of confidence stand in a relationship of two-way supervenience. To say that degrees of doubt “supervene” on degrees of confidence is to say that there can be no change in degree of doubt without a change in degree of confidence. To say that there is “two-way supervenience” is to say that, not only can there be no change in degree of doubt without
a change in degree of confidence, there can also be no change in degree of confidence
without a change in degree of doubt.\textsuperscript{150}

Here is an exercise to motivate this two-way supervenience thesis. Rewrite the
following story in terms of degrees of confidence:

I go to a used car dealership to look for a car, and the salesperson points me to a
2005 Ford Thunderbird. “Sporty, but not too pricey,” he says. “It’s one of Ford’s
most reliable models, and this particular one is in great shape.” As he seems
knowledgeable and sincere, I decide to test drive the car. I get into the car
thinking, “This car is in good condition,” and I have little doubt that this is so.
But when I shift into reverse and press the gas pedal, the car initially doesn’t
respond, then jumps backward. Immediately I begin to doubt that the car is in
good condition. “These Thunderbirds are sensitive in reverse,” says the
salesperson, “You’ll get the hang of it.” My doubt partly assuaged, I take the car
out onto the road. But whenever I bring it to a stop, the engine idles very low,
and I keep thinking it is going to stall. By the third time this happens, I am really
starting to doubt that this car is in good condition. Then I take it on a bigger road
and try driving at a variety of speeds. The car is an automatic, and I notice that
the RPM gets very high before the transmission shifts up to a higher gear. Now I
am very doubtful that the car is in good condition. I give up on the car and drive
it back to the dealership.

\textsuperscript{150}See Kim (1984) for a seminal treatment of supervenience and McLaughlin and Bennett (2011)
for a general introduction to the topic.
The exercise is easy. It’s obvious what happens to my confidence as these events unfold. It starts out high, takes a plunge when the car jumps backward, rises a little with the salesperson’s reassurance, falls again when the car idles low at stops, and falls still further when the RPM runs high before upshifting. And one could just as easily perform the reverse exercise, starting with the version of the story recounted in terms of confidence and rewriting it in terms of doubt.

The two-way supervenience thesis may fail at the extreme ends of the doubt and confidence spectrums. I have no doubt that my parents are in Texas right now. That’s where they reside; that’s where they were when I talked to them on the phone last night; they have local engagements this evening; and they never take day trips out of state. I also have no doubt that \(2 + 2 = 4\). So I have the same degree of doubt that my parents are in Texas as I have that \(2 + 2 = 4\)—namely, \textit{none}. I am in a state of \textit{doubtlessness} with respect to both propositions.

Yet there is a difference in my degrees of confidence. I am more confident that \(2 + 2 = 4\) than that my parents are in Texas right now. If I could choose between winning $1,000 if my parents are in Texas and winning $1,000 if \(2 + 2 = 4\), I would without hesitation choose the latter. I recognize that there is a possibility, though an extremely improbable one, that my parents have left the state this morning. I do not recognize any possibility that \(2 + 2\) does not, after all, equal 4. Or, if I do recognize the bare epistemic possibility, I consider its epistemic probability negligible.
Having no doubt about something appears not to entail being maximally confident of it. Doubtlessness, it seems, admits of a plurality of degrees of confidence. So it’s a bit too strong to say that degree of confidence supervenes on degree of doubt.

And one might run a similar argument against the supervenience of doubt on confidence. Suppose you and I both highly doubt that Mr. Smith, who is running for mayor, will keep his campaign promise to make all the city’s fountains run with Brawndo. There is, however, some difference in our degrees of doubt. I’d be rather surprised to see the promise fulfilled; you’d be utterly shocked. I’d bet at fairly long odds against it; you’d bet at just about any odds. But if asked how much confidence we have that the promise will be kept, we’d both say, “None.” Taken at face value, this is a case where two people have the same level of confidence—viz. no confidence—but different degrees of doubt. It looks like degree of doubt also fails to supervene on degree of confidence.

A semantic challenge to these counterexamples is available. Consider that someone opening up the restaurant kitchen in the morning might say, “It’s not warm at all in here,” and then add, “though of course it’s warmer in here than in the meat locker.” Conversational context sets a floor for the temperature where degrees of “warmth” start. Things with temperatures way above that floor count as “very warm,” while things with temperatures at or below the floor are “not warm at all.” But regardless of where the floor is, one thing counts as “warmer” than another if it has a (noticeably) higher temperature.

Doubt and confidence arguably have a similar semantics. You always count as more doubtful about \( p \) than about \( q \) if you are more confident that \( q \) than that \( p \); but you
“have no doubt” that \( p \) if your level of doubt doesn’t rise above the conversationally specified floor. And you always count as more confident that \( p \) than that \( q \) if you’re more doubtful about \( q \) than about \( p \); but you’re “not at all confident” that \( p \) if your level of confidence doesn’t rise above the conversationally specified floor.

But I think there is an asymmetry in the cases of doubt and confidence. When asked about the mayor’s promise, I might say, “I’m not at all confident that he’ll keep the promise…but I’m more confident than my friend here is.” That fits the semantic story just offered. However, when asked about my parents being in Texas right now, I don’t think I’d say, “I have no doubt they’re in Texas…but I’m more doubtful about that than about whether \( 2 + 2 = 4 \).” So I’m inclined to think that while doubt supervenes on confidence, confidence doesn’t quite supervene on doubt; confidence supervenes on doubt other than at the top end of the confidence spectrum.

3. Betting Dispositions

What is it, then, to be more confident of one proposition than another? Legend has it that it was once common for philosophers to identify degrees of confidence with betting dispositions.\(^{151}\) To be more confident that \( p \) than that \( q \) is to be disposed to pay more for a chance to win a valuable prize if \( p \) is true than one is willing to pay for a

\(^{151}\) I have yet to find a clear endorsement of this view by any major figure in the literature. The betting disposition view is sometimes associated with Ramsey (1926) and de Finetti (1974). But neither promotes quite the view in question. Ramsey explicitly repudiates the betting disposition account as insufficiently general and inexact. After raising some (very powerful) objections, he proposes a related but distinct view that he still admits to be a mere approximation to the truth. And de Finetti identifies degrees of confidence, not with the betting quotients that a person would use, but with the betting quotients that the person would regard as fair. For de Finetti, then, degrees of confidence are higher-order attitudes toward propositions about the fairness of certain bets.
chance to win the same prize if $q$ is true. For example, a week before Superbowl XLVIII, I would have been willing to pay up to $6 for a chance to win a $10 cash prize if the Denver Broncos won the game. I would have been willing to pay only $4 for a chance to win $10 if the Seattle Seahawks won the game. So I was more confident that the Broncos would win than that the Seahawks would win.

Many writers have purported to refute the betting-disposition account of confidence by describing cases in which a subject is highly confident of a proposition but refuses to bet at long odds on that proposition. But I am allowing that dispositions might be *defeasible*, in which case a person who doesn’t accept a bet in the appropriate manifestation condition might nevertheless be disposed to accept the bet in that condition. That is not to say counterexamples to the betting-disposition account can’t be given—only that they need to be handled with some care. We can, I think, imagine confident subjects who have no disposition to place bets, either because they lack the capacity, or because they simply have no interest. It is no mistake, then, to reject the betting-disposition account.

That said, betting dispositions are surely not *irrelevant* to degrees of confidence. Consider the following case:

Julie is disposed (*ceteris paribus*) to pay more for a chance to win $100 if the Yankees win another World Series by 2025 than she’ll pay for a chance to win $100 if the Red Sox win another World Series by 2025. But while she has an uninhibited disposition to use the proposition that the Red Sox will win another World Series by 2025 in her reasoning, she has only an inhibited disposition to
use the proposition that the Yankees will win another World Series by 2025 in her reasoning. (Though she might use the higher-order proposition that the Yankees will probably win another World Series by 2025.) She is disposed to be somewhat surprised if the Yankees don’t win another World Series in the next decade, whereas she is disposed to be very surprised if the Red Sox don’t do so.

The subject in this case is a dissociation victim. She has a betting disposition that is characteristic of higher confidence in a Yankee World Series win by 2025 than in a Red Sox World Series win by 2025. But she has other dispositions that are characteristic of lower confidence in the former than in the latter. The case is a hard one; it’s just not clear whether to attribute to Julie a higher or lower degree of confidence that the Yankees will win another World Series by 2025 than that the Red Sox will do so. Julie’s betting dispositions play a big role in making this case a hard case. So, while those dispositions are not strictly necessary for comparative confidence, they are nevertheless relevant to comparative confidence.

One might worry that Julie’s bizarre state of mind isn’t really possible. But we need not venture to far into the realm of science fiction to find such cases. In fact, recent cognitive science research has turned up actual cases that are not too distant from Julie’s. A striking example is an experiment reported in Klein (1997). One group of participants were asked to imagine that a genetic study revealed them to have a 30% chance of developing pancreatic disease. One subgroup was told that their (imagined) risk was above average—i.e. that the risk of pancreatic disease for people of their age and sex is 10%. The other subgroup was told that the risk for people of their age and sex is 50%.
Another group of participants were asked to imagine that a genetic study revealed them to have a 60% chance of developing pancreatic disease. One subgroup was told that their risk was above average—i.e. that the risk for people of their age and sex is 40%—and another subgroup was told the risk is 80%. The participants were then asked to rate how disturbed they would be by this information, on a scale from 1 (“not at all disturbed”) to 10 (“very disturbed”). Interestingly, the result was that the absolute risk had no bearing on subjects’ disturbance ratings, but disturbance ratings were strongly correlated with relative risk for both the 30% and the 60% groups. Participants who imagined they had a below-average 60% risk gave lower disturbance ratings than participants who imagined they had an above-average 30% risk. Evidently, subjects’ feelings in uncertain situations are not dictated by probabilities; social comparisons are important mediators. And although betting dispositions were not elicited in the experiment, one can easily imagine subjects betting in accordance with the absolute probabilities, while having feelings and feeling-driven behaviors that are sensitive to information about relative risk.

Another experiment (Denes-Raj and Epstein 1994) had participants choose a bowl from which to draw a bean, where drawing a bean of a target color would secure a prize. Participants were informed that the smaller bowl contained 10 beans, one of which was of the target color, and the larger bowl contained 100 beans, between five and nine of which were of the target color, depending on the trial.\textsuperscript{152} The optimal choice is of course to draw from the smaller bowl on all trials. But 82% of subjects drew from the larger...

\textsuperscript{152} At the beginning of each trial, the participants were told the exact number of target beans and the exact number of total beans in each bowl. They were also told the percentage of target beans in each bowl on each trial.
bowl on at least one of five trials, 24% of subjects drew from the larger bowl twice in five trials, and 8% drew from the larger bowl every time. Some participants who had made suboptimal selections later explained that although they knew the odds were against them, they chose the larger bowl because it offered more ways of winning. And even some of the participants who consistently drew from the smaller bowl admitted that the larger bowl looked more inviting and that they had to fight the temptation to draw from the larger bowl. It seems that an “alternative-outcomes” heuristic influences choice (perhaps mediated by “temptations” to choose), sometimes even overriding considerations of expected value.

Windschitl and Wells (1994) invoke the popular idea of dual-systems to explain these and other peculiar results of uncertainty experiments. The idea is that human beings have two main multi-purpose cognitive systems that can process information and guide behavior. “System 1” is associative, automatic, involuntary, and fast. “System 2” is rule-based, controlled, deliberate, and slow. Kahneman (2011: 25) provides the following illustration.154

153 For an excellent historical overview of the development of dual-process and dual-systems theories, see Frankish and Evans (2009 : ch. 1).

154 This exercise is a variant on the experiments of Stroop (1935). The phenomenon illustrated is known as the “Stroop effect.”
One can quickly and easily move down the left-hand column, calling out “Upper” if the word is upper-case and “Lower” if the word is lower-case. And one can quickly and easily move down the right-hand column calling out “Left” if the word is positioned to left of center and “Right” if the word is tabbed once to the right of center. But it takes much more concentration\textsuperscript{155} to move down the left-hand column calling out “Left” if the word is positioned to left of center and “Right” if the word is tabbed over to the right of center. And similarly for moving down the right-hand column calling out “Upper” if the word is upper-case and “Lower” if the word is lower-case. We have an automatic tendency to read the words, and this tendency comes into conflict with the effort to follow the rules of the exercise.

Windschitl and Wells suggest that subjects may treat an uncertain proposition differently depending on whether the situation activates System 1 or System 2. In situations that elicit rule-based processing, subjects will tend to make decisions on the

\begin{tabular}{|c|c|}
\hline
\textbf{LEFT} & upper \\
\hline
left & lower \\
\hline
right & LOWER \\
\hline
\textbf{RIGHT} & upper \\
\hline
\textbf{RIGHT} & UPPER \\
\hline
\end{tabular}

\textsuperscript{155} For English readers, that is. The effect will not be manifested in subjects who do not understand the words.
basis of probability information. In situations where rule-based reasoning is not triggered (because there is low pressure or because conscious attention is diverted to other tasks), subjects will tend to use heuristics whose results are discordant with the results of rule-based processing. It is also likely that there will be cases in which both systems are active and the agent experiences conflict (or “temptation,” as subjects in the bean-drawing experiment reported).

I will not defend any form of dual-systems or dual-processes theory of cognition here, though I think one must recognize a plurality of ways in which human subjects process uncertain evidence. The point here is only that it is possible to imagine subjects whose sureness dispositions are fairly radically dissociated. Such subjects are already hypothesized by cognitive scientists who promote dual-systems theories. Some of these dissociation cases will be hard cases in which it is unclear whether to attribute higher confidence in one proposition than another. And in particular, we can get hard cases like the World Series case above in which the subject has betting dispositions characteristic of being more confident of one proposition than of another but has other dispositions characteristic of being less confident of the first than of the second.

So, while the notorious betting-disposition account of confidence should be rejected, we can affirm that there is a grain of truth in the betting-disposition account. Betting dispositions should play an important role in an account of belief—in fact, it is just the role that decision weights played in the account of doubt defended in Chapter 2. Betting dispositions can turn what would have been an easy case of being more confident that \( p \) than \( q \) (because all the other sureness dispositions suggest the subject is more confident that \( p \) than that \( q \)) into a hard dissociation case. As I did for belief and doubt, I
am going to defend a “lenient” view on which being more confident of one proposition than another is a matter of having higher degrees of the properties associated with enough of the relevant comparative sureness dispositions.

4. An Account of Confidence

I have argued above that doubt supervenes on confidence; there is no difference in degree of doubt without a difference in degree of confidence. But comparative confidence reverses the direction of the comparative doubt relation: if you doubt $p$ more than $q$, then you are more confident that $q$ than $p$. And I gave the following “lenient” account of comparative doubt in Chapter 2. There are doubt strata—levels of doubt (extreme doubt, mild doubt, doubtlessness, perhaps a few others) with which we associate certain ranges of degrees of the various dubitative dispositions. If, for sufficiently many dubitative dispositions, subject $s$ is disposed, with respect to some proposition $p$, to degrees in the range of a particular doubt stratum, then $s$ “occupies” that stratum with respect to $p$. And if $s$ occupies a higher stratum with respect to $p$ than with respect to $q$, then $s$ is more doubtful about $p$ than about $q$. If $s$ occupies the same stratum with respect to $p$ and $q$, $s$ could still be more doubtful about $p$ than about $q$ by having higher degrees of enough of the dubitative dispositions.

Now, given that you are more doubtful about $p$ than about $q$ only if you are more confident that $q$ than that $p$, we have the beginnings of an account of comparative confidence. Each sufficient condition for being more doubtful about $p$ than about $q$ will be a sufficient condition for being more confident that $q$ than that $p$. Thus, if you occupy
one doubt stratum with respect to \( p \) and a lower doubt stratum with respect to \( q \), then you are more confident that \( q \) than that \( p \). And if you occupy the same stratum with respect to both \( p \) and \( q \), but have higher degrees of enough dubitative dispositions with respect to \( p \) than with respect to \( q \), then you are more confident that \( q \) than that \( p \).

So all of the dispositions that are relevant to comparative doubt (ch. 2, §8) are also relevant to comparative confidence. Assuming you occupy the same stratum with respect to \( p \) and \( q \), you’re more confident that \( p \) than that \( q \) if you’re less inhibited in your disposition to use \( p \) as a premise in reasoning than in your disposition to use \( q \) as a premise in reasoning, you’re less inhibited in your gladness that \( p \) when you want \( p \) to be the case than in your gladness that \( q \) when you want \( q \) to be the case, you’re more surprised at conclusive evidence against \( p \) than at conclusive evidence against \( q \), you’re disposed to use weaker hedges in asserting \( p \) than in asserting \( q \), and so on (or if you score lower in enough of those areas). Indeed, every “dubitative” disposition is also a “sureness” disposition—a disposition that is characteristic of having some degree of confidence or sureness that something is the case. My use of the terms will be interchangeable, except that when speaking of a disposition as a “dubitative” disposition, lower degrees will be understood to count toward higher degrees of confidence, whereas when speaking of a disposition as a “sureness” disposition, higher degrees will be understood to count toward higher degrees of confidence.

Because confidence is related to doubt in this way, our rejection of realizer functionalism about doubt commits us also to rejecting realizer functionalism about confidence. For suppose confidence in some proposition \( p \) is identified with some degree neurophysiological property \( F_p \), where \( F_p \) underlies the relevant dispositions, but
is distinct from them. Then, as we saw with mad pain, it should be possible to have cases in which I have a higher degree of $F_p$ than you, even though you score lower than I do on all (or enough) of the dubitative dispositions. Then I’d be more confident that $p$ than you even though you’re less doubtful that $p$ than I am. But, by the supervenience of doubt on confidence, that’s impossible. So we should reject realizer functionalism about confidence.\footnote{Alternatively, we could have argued against realizer functionalism about confidence from the multiple realizability of confidence and the impossibility of mad confidence. The supervenience thesis provided a shortcut, allowing us to build on the multiple-realizability and mad-pain arguments of Chapter 2.}

Now the question is whether the dispositions relevant to confidence are limited to the dubitative/sureness dispositions, or whether there are additional sureness dispositions that do not double as dubitative dispositions (dispositions that count only toward confidence and not toward doubt). Here, too, the supervenience of doubt on confidence is helpful. Suppose you and I occupy the same doubt stratum for $p$, and suppose you have, with respect to $p$, a higher degree of enough of the dubitative dispositions to qualify as being more doubtful about $p$ than I am. If degree of doubt supervenes on degree of confidence, then I am more confident that $p$ than you are. But suppose there are a number of sureness dispositions that do not double as dubitative dispositions, and suppose I have, with respect to $p$, lower degrees of all of those dispositions than you have. If there are a fair number of these sureness dispositions, then I will not qualify, or anyway will not clearly qualify, as more confident than you.

The supervenience of degree of doubt on degree of confidence thus suggests that there are few, if any, sureness dispositions that do not double as dubitative dispositions.
But that is not very surprising. After all, it is very difficult to find items of common knowledge about levels of confidence that have nothing to do with levels of doubt. What we do find are dubitative dispositions whose degrees reach either a saturation point or a minimum, beyond which there are degrees of some sureness disposition. Again, what I call a “saturation point” is a point in the spectrum of degrees of a disposition such that degrees beyond that point are irrelevant to comparative doubt. If you are disposed to be shocked at conclusive evidence against $p$, but disposed to be utterly floored by conclusive evidence against $q$, that does not contribute to your being more doubtful that $p$ than that $q$. There’s a certain level of surprise such that if you’re disposed to that level of surprise for two propositions, then, all else equal, you’re not more doubtful of one than of the other. But the level of surprise to which you’re disposed always contributes to your level of confidence, no matter how high it is.

Other dubitative dispositions reach a minimum, but lie along a spectrum that admits of continuation of some sort. The hedging of assertions is like this. The limiting case of a hedged assertion is a completely unqualified assertion. But the spectrum of qualification doesn’t end there; it continues with reinforcing of assertions. Whereas we attenuate our commitment to propositions asserted through hedging, we augment our commitment by reinforcing. Reinforcers include “clearly,” “certainly,” “definitely,” “absolutely,” “for sure,” and the like. For example, I might reinforce the

---

157 So is the feeling of doubt. If confidence continues to rise after the point where the disposition to feel doubt is (normally) extinguished, a subject (normally) comes to be disposed to have feelings of confidence or conviction.
assertion, “I will be at the party,” thus: “I will definitely be at the party” or “For sure I
will be at the party.”

Reinforcing comes in degrees. One expresses more than mere lack of doubt by
adding reinforcers to one’s assertions. And one can easily reinforce further by stacking
reinforcers—e.g. “I will absolutely, positively be at the party.”

Herein is further reason to think that confidence doesn’t supervene on doubt.
Some of the dubitative dispositions have minimums or saturation points on a spectrum
whereon further variation makes a difference to confidence but not to doubt. If I learn
that you have no doubt that \( p \), I do not yet know your level of confidence. I must go on
to consult your dispositions to surprise, your decision weights, your dispositions to
reinforce assertions, and the like.

Confidence, then, is a matter of possessing sureness dispositions. And here
again it seems we must accept a lenient, rather than a strict, view. As in the case of belief
and doubt, a lenient view of comparative confidence provides the best explanation of the
relevant phenomena. We are hard pressed to find a sureness disposition such that scoring
higher on it is strictly necessary for comparative confidence. If there are such
dispositions, we are unable to identify them, yet are sensitive to them in our classificatory
practice. But then it is a mystery why our sensitivity to the relevant dispositions should

---

158 One can also express greater confidence by adding emphasis to one’s words. “He will
definitely come” expresses greater confidence than “He will definitely come” (in a single conversational
context).

159 Or having some property or other that stands in the relevant causal relations, or having some
representation that plays the relevant role, or being predictable by a confidence-ascribing account. I’ve
been suppressing these alternatives, proceeding in terms of the relatively simple dispositionalist view. It is
to be understood that the argument could be recast in terms of role functionalism, representationalism, or
interpretationism.
fail us when there is confidence dissociation. The more elegant story is the one offered by the lenient view: what makes for comparative confidence is having higher degrees of enough of the relevant sureness dispositions, and hard dissociation cases are borderline cases.

5. Summing Up

We now have a substantial enough account of confidence to serve the purpose of assessing the Threshold View. Confidence is stratified; there are a few broad levels of confidence with which we associate certain ranges of degrees of the various sureness dispositions. You’re more confident that $p$ than that $q$ if you occupy a higher stratum with respect to $p$ than with respect to $q$. You occupy a stratum with respect to a proposition $p$ by having, with respect to $p$, for enough of the sureness dispositions, degrees of those dispositions that fall within the range associated with that particular stratum. If you occupy the same stratum with respect to both $p$ and $q$, you may still be more confident that $p$ than that $q$ by having higher degrees of enough of the sureness dispositions with respect to $p$ than you have with respect to $q$.

There can be borderline cases of comparative confidence. You might not clearly occupy a given stratum with respect to $p$. This will happen if, for some but not others of the relevant dispositions, you have degrees falling in the ranges associated with that stratum. If you clearly occupy one stratum with respect to $p$ and are a borderline case of occupying the same stratum, and a borderline case of occupying a lower stratum, with respect to $q$, then you’ll be a borderline case of being more confident that $p$ than that $q$.
Even if you clearly occupy the same stratum with respect to both $p$ and $q$, you might be a borderline case of being more confident that $p$ than that $q$. This will happen if you have higher degrees of some, but not clearly enough, of the sureness dispositions with respect to $p$ than you have with respect to $q$.

We are now equipped with carefully developed accounts of belief, doubt, and confidence that can aid us in our assessment of the Threshold View. That assessment is the task of Part II of this dissertation.
PART 2

ASSESSMENT
CHAPTER 4

NON-EPISTEMOLOGICAL OBJECTIONS TO THE THRESHOLD VIEW

1. Introduction

This chapter addresses the main two non-epistemological objections that have been raised against the Threshold View. I will argue that even the most naïve version of the Threshold View (TVN)—the invariantist, vagueness-opposing determinable-determinate Threshold View—can be defended against the first. The second objection, however, may require a vagueness-allowing threshold view.

Two different versions of the first objection—the “Correctness Objection”—appear in the literature. I present the first in §2 and reply to it in §3. I present the second version of the Correctness Objection in §4 and reply to it in §5. Then I turn to the “Arbitrariness Objection” in §6. I show in §6 that the Arbitrariness Objection presupposes a certain type of account of confidence. Considerations from Chapter 3 tell against this type of account. I then turn (§7) to a more sophisticated version of the Threshold View that addresses the Arbitrariness Objection by allowing the belief threshold to be vague. I consider (§8) a way of augmenting the Arbitrariness Objection that has recently been proposed, and I show that the augmented objection can still be resisted.
2. Fantl and McGrath’s Correctness Objection

I once believed that orcas are whales. I was wrong; they are a species of dolphin. If I believe a false proposition, then I am wrong about that proposition. The correctness condition for belief is truth.

According to what I will call the “Correctness Objection” to the Threshold View, high confidence has a different correctness condition. Being highly confident of a false proposition does not make you wrong about that proposition. But if belief and high confidence have different correctness conditions, then they cannot be the same thing. The Threshold View is mistaken.¹⁶⁰

The proponent of the Correctness Objection needs to provide some motivation for the idea that high confidence in a false proposition doesn’t make you wrong about that proposition. After all, it is not obvious that being confident of a false proposition wouldn’t constitute being wrong, at least where the degree of confidence approaches certainty. Some writers, in fact, seem to think it obvious that being confident of a false proposition would constitute being wrong. Joyce [1998: 579], for example, writes, “Unlike full believers, partial believers must worry about the epistemic costs associated with different ways of being wrong. Since the worst way of being wrong is to be maximally confident in a falsehood, there is a significant epistemic disincentive associated with the holding of extreme beliefs.” Joyce does not endorse the Threshold View, but this is not for any qualms about saying we are wrong about falsehoods in

¹⁶⁰ The argument needs modification to address what I have identified (in Chapter 1) as the basic Threshold View. The view at issue in this dissertation is the view that belief is a determinable of which all and only the highest degrees of confidence are determinates. The Correctness Objection would thus need the premise that if φ-ing p when p is false doesn’t make you wrong about p, then for any ψ such that ψ is a determinable of which φ is a determinate, ψ-ing p when p is false also doesn’t make you wrong about p. I won’t evaluate this premise here, but will simply grant it for the sake of argument.
which we invest confidence. As Joyce sees it, credences are like outright beliefs in having both content and “valence”—i.e. an orientation with respect to the content. An outright belief in a falsehood constitutes being wrong, since it is a positively valenced attitude toward a false proposition. Credences greater than 0.5 in falsehoods are also positively valenced attitudes toward false propositions and are thus also ways of being wrong; and there are as many ways of being wrong as there are levels of credence above 0.5.

We would thus need some sort of argument for rejecting the view that confidence (or at least a quite high degree of confidence) in a false proposition constitutes being wrong about that proposition. Jeremy Fantl and Matthew McGrath (2009: 141) hint at such an argument in their presentation of the Correctness Objection:

If you believe $p$ and $p$ is false, then you are mistaken about whether $p$…. [But consider a standard Lockean [i.e. Threshold] View under which belief is a matter of having a credence greater than some $d < 1$. Suppose $d$ is .98. If you have a .99 credence for $p$, and $p$ turns out to be false, it does not follow that you were wrong about whether $p$. If you were told ‘Ha, so you were wrong about whether $p$, weren’t you?’ you could reasonably say in your defense: ‘Look, I took no stand about whether $p$ is true or false; I just assigned it a high probability; I assigned its negation a probability, too.’

Fantl and McGrath’s idea is that being highly confident of a proposition $p$ is to assign a high probability to $p$, rather than to take a stand for or against $p$. You’re not wrong about a false proposition $p$ if all you’ve done is to assign $p$ a high probability.

It is difficult to assess Fantl and McGrath’s Correctness Objection without knowing what they mean by “assigning” a probability to a proposition. And they do not explain what they mean. But let us consider what they might mean.
The word “assign” has a range of senses, but they fall into two basic kinds: administrative and judgmental. The administrative senses of “assigning” include allotting, appointing, apportioning, fixing, and designating. The judgmental senses include imputing, ascribing, and ascertaining.\(^{161}\)

Suppose Fantl and McGrath have in mind a judgmental sense of “assigning” a probability to a proposition. Then they are claiming that high confidence is a matter of attributing a high probability to a proposition. If all you do is to attribute a high probability to a proposition \(p\), then you are liable to being mistaken, but not about \(p\). Rather, you are liable to being mistaken about whether \(p\) is highly probable. Ascribing a probability to an event is one way of being non-committal. The weather forecaster doesn’t claim that it will rain tomorrow, but only that there is a high probability of rain. But then the forecaster isn’t wrong if it doesn’t rain. So on the judgmental interpretation, the idea is that high confidence that \(p\) is not a judgment about \(p\), but only a judgment about \(p\)’s probability.

Now suppose instead that Fantl and McGrath have in mind an administrative sense of “assigning” a probability to a proposition. Then they are claiming that high confidence that \(p\) isn’t a judgment at all—neither a judgment about \(p\) nor a judgment about a higher-order proposition concerning \(p\)’s probability. Instead, high confidence that \(p\) is a commitment or a policy to treat \(p\) as highly probable for certain purposes. Perhaps \(p\) will be treated as highly probable when one is asked to place bets or pick

\(^{161}\) A similar duality is found in the senses of the word “determine.” I might determine the date of a movie release in the sense of figuring out what date it will be released. The production house determines the date of a movie release in the sense of making it the case that the move is released on a particular date.
stocks or choose a neighborhood or select an insurance plan. No such use of probabilities makes one wrong about \( p \) if \( p \) turns out to be false. So on the administrative interpretation, the idea is that high confidence is not a judgment at all.

We thus have two versions of the Correctness Objection. They have in common the premise that when you believe a false proposition \( p \), you are wrong about \( p \). One adds the premise that to be highly confident that \( p \) is to make a judgment about \( p \)’s probability, not about \( p \) itself, and thus doesn’t make you wrong about \( p \) if \( p \) is false. The other adds the premise that to be highly confident that \( p \) is to use a high probability for \( p \) for certain purposes, in which case high confidence isn’t a judgment at all. Either way, the Threshold View fails.

3. Responses to Fantl and McGrath’s Correctness Objection

I’ll first address the judgmental interpretation of Fantl and McGrath’s Correctness Objection and then turn to the administrative interpretation. One response that I’ll give applies only to the judgmental version; the other applies to both versions.

3.1 Two Responses to the Judgmental Correctness Objection

The idea that confidence is a judgment about probability—the “Probability Judgment View” or “PJV,” as I’ll call it—is not new.\(^{162}\) It’s also not popular. A number

\(^{162}\) I am grateful to Robert Audi, Michael DePaul, Amelia Hicks, Rebecca Chan, Matthew Baddorf, and Andrew Moon for helpful discussion of the Probability Judgment View.
of thinkers have articulated PJV only to dismiss it.163 There is one objection in particular that has often been regarded as devastating. Here is Keith Frankish on the matter:

Now it is true that we do sometimes form flat-out beliefs about probabilities and desirabilities, but it is implausible to identify our degrees of confidence and preference with such beliefs. For we attribute degrees of confidence and preference to individuals who lack the conceptual sophistication required to form beliefs of this kind. We speak of children and animals having more or less confidence in something and preferring one thing to another, even though they do not possess the concepts of probability and desirability. Indeed, even if a person is capable of forming beliefs about probabilities and desirabilities, we do not suppose that they have actually formed appropriate beliefs of this kind every time their behaviour manifests some degree of confidence or preference—certainly not that they have done so consciously, and I do not think we are committed to the view that they have done so non-consciously either. (Frankish 2009: 77)

Frankish gives us two species of the objection. First, children and even some non-human animals have degrees of confidence, yet they do not have the conceptual sophistication that is required to make judgments about probabilities. Second, even those who do have the concepts required for judgments of probability need not employ those concepts whenever they have some degree of confidence toward a proposition. But these are both species of a single “Oversophistication Objection.” The objection is that degrees of confidence cannot be identified with probability judgments, because probability judgments require more conceptual sophistication than what is often employed (or even possessed) by those who have degrees of confidence.

It is possible to offer some resistance to the Oversophistication Objection. To see how, let’s first consider a third version of the objection due to Ralph Wedgwood:

The very idea of precisely measuring the probability of propositions did not emerge until the seventeenth century. Brilliant agents such as Plato and Aristotle and the ancient Greek mathematicians never had any beliefs whatsoever in any proposition of the form ‘Proposition $p$ has a probability of $n$’. So, on this view, these agents never had any levels of confidence at all. (Wedgwood 2012: 315)

The trouble with this version of the Oversophistication Objection is that it assumes that a probability judgment must employ the sophisticated mathematical notion of probability that emerged only in the seventeenth century. But then the authors of the following works would have to be deeply confused:


Such scholarship does not, of course, betray ignorance of the late emergence of a mathematically sophisticated notion of probability. It simply highlights a fact that should have been obvious: that probability judgments need not be sophisticated.

How much resistance to the Oversophistication Objection does this fact make possible? We can dismiss Wedgwood’s version of the Oversophistication Objection: Plato and Aristotle could well have made rudimentary probability judgments (e.g. that a prospect is risky or that some proposition is probably true or that one outcome is more likely than another). But things get messy when we try to use the possibility of unsophisticated probability judgments to resist the other versions of the Oversophistication Objection. Do children and non-human animals have *any* probabilistic notions, even unsophisticated ones? Do sophisticated adults *always* employ (sophisticated or unsophisticated) probabilistic notions when they have confidence about something?

PJV is rather precarious. Vindicating it would require either some surprising empirical findings (e.g. that young children use rudimentary probability concepts) or some surprising conceptual results (e.g. that probability judgments can be made by quite

164 Plato uses the term *eikos*, which literally means “like truth,” but which seems to play the role of “likely” in the Socratic dialogues. Aristotle also identifies a class of enthymemes taken from probable (*eikos*) premises.
unsophisticated subjects, or that unsophisticated subjects do not have degrees of confidence). If Fantl and McGrath intend the judgmental version of the Correctness Objection, they are really going out on a limb with respect to the nature of confidence and/or the psychology of unsophisticated subjects.

One might of course try to supplement the judgmental version of the Correctness Objection with an account of confidence that is favorable to PJV. But I have carefully developed an account of confidence in Part I of this dissertation, and that account is not favorable to PJV. None of the sureness dispositions enough of which makes for a particular level of confidence requires higher-order beliefs about probabilities. One can be disposed to various levels of surprise or disposed to have one’s emotions inhibited to some degree or disposed to assert with hedges or reinforcers, all without having beliefs about probabilities. It is quite easy to have enough of the relevant dispositions without having probabilistic beliefs. So the Oversophistication Objection stands.

There is another response to the judgmental version of the Correctness Objection that is worth mentioning. The response is that PJV leads to a vicious regress of judgments. Whenever you make a judgment (i.e. form a belief) that \( p \), for some proposition \( p \), you have some level of confidence or other in \( p \). Call this the “Accompaniment Thesis.” Now suppose you are fairly confident that it will rain in

\[\text{165}\]

One comes close: namely, the disposition to use a particular decision weight for a proposition in one’s decisions. But that disposition isn’t strictly necessary for confidence, and having it doesn’t require probabilistic belief.

\[\text{166}\]

I am grateful to Robert Audi and Michael DePaul for (independently) suggesting this line of response.

\[\text{167}\]

The Accompaniment Thesis drives the “Unconfident Examinee” counterexample (Woozley (1952), Radford (1966)) to the claim that knowledge entails belief. The examinee is not at all confident of the date she writes down in response to the question when Queen Elizabeth I died, a fact she had learned
Seattle this week. By PJV, this confidence amounts to the belief that it is fairly likely to rain in Seattle this week. Then, by the Accompaniment Thesis, you have some degree of confidence that it is fairly likely to rain in Seattle this week. By PJV again, you have a belief about the probability that it is fairly likely to rain in Seattle this week. And by the Accompaniment Thesis again, you have some degree of confidence in a proposition concerning the probability that it is fairly like to rain in Seattle this week. And so on forever. But the regress is vicious, since you evidently do not have all of these higher-order probabilistic beliefs whenever you are fairly confident it will rain in Seattle in the coming week. Call this the “Doxastic Regress Objection.”

There are just two ways one can try to rescue PJV from the Doxastic Regress Objection. One is to deny the Accompaniment Thesis, and the other is to deny that the regress is vicious. But the Accompaniment Thesis is quite plausible, given the accounts of belief and confidence defended in Chapters 1 and 3. There is quite a lot of overlap between the doxastic dispositions and the sureness dispositions. It would be very difficult to have enough of the doxastic dispositions to qualify as believing without having enough sureness dispositions to qualify as having some degree of confidence or other. And the account of belief in Chapter 1 vindicates the claim that the regress would be vicious. I am disposed to assert that it will rain in Seattle this week; I’m not disposed and could have recalled easily outside of the high-pressure exam situation. Her response to the question has the phenomenology of a wild guess. But her answer (1603) is correct. The examinee arguably still knows the date, but seems to lack belief.

Epistemologists have disagreed sharply over whether the Unconfident Examinee is a case of knowledge. And Rose and Schaffter (2013) have recently disputed the claim that the Unconfident Examinee lacks belief (they claim she dispositionally believes, but doesn’t occurrently believe). But it is assumed on all sides that if the Unconfident Examinee is indeed unconfident, then she does not believe. (Rose and Schaffter think she is dispositionally confident.)
to assert higher-order propositions, such as that it’s very probable that it’s very probable that it’s very probable that it’s very probable that it’s very probable that it will rain in Seattle this week. I’m not disposed to be surprised to learn that it’s not the case that it’s very probable that it’s very probable that it’s very probable that it’s very probable that it will rain in Seattle this week. (I’d greet that information with a mystified shrug.) And similarly for other doxastic dispositions. So both premises of the Doxastic Regress Objection are vindicated by the groundwork we’ve laid in Part I.

3.2 Oversophistication Objection to the Administrative Correctness Objection

Interpreted judgmentally, Fantl and McGrath’s Correctness Objection has little to recommend it. But the objection doesn’t fare much better on the “administrative” interpretation. On the administrative interpretation, assigning a probability to a proposition is not a probability judgment; it is a matter of associating a probability with a proposition for certain purposes. I might have little idea how likely it is that I’ll be burgled in the coming year. I might even think that, objectively speaking, there is no such probability (perhaps because I think future free acts do not have probabilities). But I might nevertheless select a probability to use in determining how much I’m willing to pay for insurance, or whether to install a home security system, or how often to back up my laptop. I thus “assign” a probability to an event in the sense that I designate the probability that will be associated with the event for practical purposes.

This version of the Correctness Objection avoids the Doxastic Regress Objection. Assignment in the administrative sense does not imply confidence about the assignment. So there is no analog of the Accompaniment Thesis to generate a regress.
But the administrative version of the Correctness Objection is still subject to the Oversophistication Objection. Statisticians, decision theorists, and decision-theoretically minded folk select probabilities to associate with propositions for practical purposes. But most of us most of the time, and unsophisticated subjects all the time, do nothing of the sort. It takes sophistication to select and use probabilities, even if judgmental endorsement is not involved. Confidence does not require such sophistication.

Might Fantl and McGrath intend some other sense of “assign”—a sense in which unsophisticated subjects could “assign” probabilities? Perhaps a conceptually unsophisticated subject could have a sophisticated cognitive system that “assigns” probabilities in an unconscious, subpersonal way. Indeed, I find that possibility quite plausible. But even if our subpersonal systems make probability assignments, there is still a major conceptual hurdle to building a Correctness Objection on that premise: why should we identify confidence with that subpersonal operation?

By the account of confidence defended in Chapter 3, we should regard a subpersonal probability assignment as high confidence only if it bestows enough of the sureness dispositions and makes the subject have high enough degrees of those dispositions. But suppose I “score high” on a lot of the sureness dispositions (in virtue of a subpersonal probability assignment). I’m disposed not to hedge, but to reinforce, my assertions that \( p \). I’m disposed to be very surprised at conclusive evidence against \( p \). I’m disposed to be completely uninhibited in my gladness that \( p \) if I want \( p \) to be the case. And so on. But if that’s my comportment with respect to \( p \), then it is rather difficult to see why we shouldn’t regard me as being wrong if \( p \) turns out to be false.
Fantl and McGrath’s Correctness Objection thus fails on any plausible interpretation. But theirs is not the only Correctness Objection on offer.

4. Ross and Schroeder’s Correctness Objection

A distinct version of the Correctness Objection was recently introduced by Jacob Ross and Mark Schroeder. Ross and Schroeder (forthcoming) say that they “agree entirely” with Fantl and McGrath’s Correctness Objection. But theirs is a more refined version of the objection, and it dispenses with the problematic identification of confidence with probability assignments. Here is their presentation of the argument:

Believing that \( p \) when \( p \) is false [always] constitutes being wrong about whether \( p \)….Whatever it is that constitutes, or makes it the case, that an agent is wrong about whether \( p \) when \( p \) is false, it can’t be an attitude that involves, or commits the agent to, acknowledging the possibility that \( p \) is false. But having a credence in \( p \) of less than 1 involves, or commits one to, having a positive credence in \( \neg p \), and so it involves, or commits one to acknowledging the possibility that \( p \) is false. Hence, having a credence of less than one in a false proposition \( p \) can’t constitute being wrong about whether \( p \). But if having a credence of less than one in a false proposition \( p \) could constitute falsely believing that \( p \), and if falsely believing that \( p \) always constitutes being wrong about whether \( p \), then having a credence of less than one in a false proposition \( p \) could constitute being wrong about whether \( p \). It follows that if having a credence of less than one in a false proposition \( p \) could constitute falsely believing that \( p \), then it would not be the case that falsely

168 Kenny Easwaran has suggested to me that Fantl and McGrath’s presentation of the Correctness Objection might be charitably read as getting at something in the vicinity of the argument that Ross and Schroeder present. And I agree that the main idea in Ross and Schroeder’s argument seems to be in the background of Fantl and McGrath’s brief discussion. But by all appearances, the driving idea in Fantl and McGrath’s argument is that if you are highly confident of a proposition, then you “just assigned it a high probability.” In any case, both the argument that I have attributed to Fantl and McGrath and the argument to be considered in this section are worthy of attention.
believing that \( p \) always constitutes being wrong about \( p \). [Ross and Schroeder forthcoming: 17-18]

Ross and Schroeder evidently mean for “constitutes” to signify some kind of dependence relation. We sometimes speak of a fact making something the case. We say that one thing is the case in virtue of something else’s being the case or because something else is the case. We say that one fact explains another or grounds another, or that one fact reduces to another. It is controversial whether these all amount to the same thing—i.e. whether these terms get at a single dependence relation or at two or more distinct dependence relations.\(^{169}\) We won’t try to settle that issue here or to nail down just which dependence relation Ross and Schroeder have in mind, if there is more than one in this vicinity. Let us call the relation Ross and Schroeder have in mind the “case-making” relation—the relation that holds between two facts when one makes the other the case. We’ll assume that, like any other dependence relation, the case-making relation is asymmetric (if \( A \) makes \( B \) the case, then \( B \) doesn’t make \( A \) the case) and transitive (if \( A \) makes \( B \) the case, and \( B \) makes \( C \) the case, then \( A \) makes \( C \) the case).

The argument can be recapped in terms of the case-making relation. A credence less than 100% can’t make it the case that you believe. If it could, then a credence less than 100% in a false proposition could make it the case that you believe falsely. But believing falsely makes it the case that you are mistaken. So, by the transitivity of the case-making relation, if a credence less than 100% could make it the case that you believe, then a credence less than 100% could make it the case that you are mistaken.

\(^{169}\) See Rosen (2010).
But a credence less than 100% in a proposition can’t make it the case that you are mistaken. For a credence less than 100% in a proposition commits you to the possibility that the proposition is false. And no attitude that commits you to the possibility that a proposition is false makes you mistaken about that proposition when the proposition is false.

If successful, the argument shows that a credence less than 100% can’t make it the case that you believe. But what does this have to do with the Threshold View? The Threshold View does not, after all, claim that some credence less than 100% can make it the case that you believe. Here, again, is the naïve version of the Threshold View:

**TVN**  There is a degree of confidence $T_B$ such that believing a proposition $p$ is a determinable that has as its determinates all and only the degrees of confidence in $p$ higher than $T_B$.

One might initially think that if TVN is the view at issue, then Ross and Schroeder’s argument misses the mark. TVN does not say that having confidence above $T_B$ makes it the case that one believes. And the relation asserted by TVN is between believing a proposition and having confidence above $T_B$ in a proposition, not between believing and having credence less than 100%. There are thus two respects in which Ross and Schroeder’s argument might seem directed at the wrong target.

But the Threshold View is not off the hook. Ross and Schroeder’s argument can be made to engage the Threshold View given two auxiliary assumptions. The first is that if the Threshold View is true, then there are credences less than 1 that are still above $T_B$. 

207
This assumption is granted by all flesh-and-blood proponents of the Threshold View. A credence of 1 is supposed to be absolute certainty. And it is generally agreed that a person can believe something without being absolutely certain of it. But then, given the Threshold View, there must be credences less than 1 that qualify as belief. Let “Sub-Certainty Belief” or “SCB” name the assumption that if the Threshold View is true, then there are some credences in-between $T_B$ and 1.

Now for the second assumption. It is plausible that the determinate-determinable relation is connected with the case-making relationship. If an object’s being red makes it the case that the object is extended, then an object’s being scarlet makes it the case that the object is extended. The underlying principle can be put technically in terms of the determinable-determinate relation (i.e. the inverse of the determinate-determinable relation): for any state of affairs $S$, the property of making $S$ the case is closed under the determinable-determinate relation. That is,

**Case-Making Closure (CMC)** For any state of affairs $S$, any object $o$, and any properties $P$ and $Q$, if $P$ is a determinable and $Q$ is one of its determinates, then $o$’s having $P$ makes it the case that $S$ only if $o$’s having $Q$ makes it the case that $S$.\textsuperscript{170, 171}

\textsuperscript{170} One way of justifying this principle appeals to the transitivity of case-making, together with the widely held assumption that instances of a determinate ground instances of its determinable (see Rosen (2010: §§11-12)). If $o$’s having $Q$ makes it the case that $o$ has $P$, because $P$ is a determinable of which $Q$ is a determinate, and if $o$’s having $P$ makes it the case that $S$, then, by the transitivity of case-making, $o$’s having $Q$ makes it the case that $S$.

\textsuperscript{171} One might question CMC on the following grounds. That I am under 35 years old makes it the case that I am unqualified to serve as president of the United States. And being 33 is a determinate of being under 35. But if a foreigner asks me why I don’t run for president, it would be odd to say, “Because I
We can give a variant on Ross and Schroeder’s argument against the Threshold View in terms of SCB and CMC. Suppose for reductio that the Threshold View is true. By SCB, if the Threshold View is true, then there are credences in-between $T_B$ and 1. Let $c^*$ be one such credence. But if $c^*$ is a determinate of belief, then having $c^*$ toward a false proposition would be a determinate of false belief. And having a false belief makes it the case that one is mistaken. So by CMC, having $c^*$ toward a false proposition makes it the case that one is mistaken. But $c^*$ is a credence less than 1, and a credence less than 1 in a proposition commits you to the possibility that the proposition is false. And no attitude that commits you to the possibility that a proposition is false makes you mistaken about that proposition when the proposition is false. So having $c^*$ toward a false proposition does not make it the case that you are mistaken. But that gives us a contradiction, and the Threshold View is reduced to absurdity.

In addition to SCB and CMC, there are three the substantial premises in this argument:

---

am 33 years old.” It’s not my being 33 specifically, but my being under 35, that disqualifies me. The determinable property is more naturally said to make it the case that I’m unqualified than is the determinate property.

But this worry might be addressed in terms of conversational implicatures. While it is not untrue to say that my being 33 disqualifies me to serve as president, saying this does suggest something untrue: namely, that the age of 33 is special in disqualifying me to serve as president. The reason it suggests this is that a hearer will tend to infer that there is some reason why I am giving this specific age as the reason why I am disqualified, rather than saying something more general (e.g. that I am under 35). Also, we expect each other to be helpful and informative, and it is more informative to cite my being under 35 as the reason why I am disqualified, since the hearer can infer that the rule is that I must be at least 35 years old to serve as president. So determinates make the case whatever their determinables make the case, but it sometimes violates conversational expectations to cite the determinate rather than the determinable as the ground or explanation.
**Correctness Condition for Belief (CCB)**  Having a false belief (always) makes it the case that one is mistaken.

**Commitment to Possible Falsity (CPF)**  For any credence $c$ and proposition $p$, if $c$ is a credence less than 1, then having $c$ toward $p$ commits you to the possibility that $p$ is false.

**Mistake-Proof Attitudes (MPA)**  For any attitude $\phi$, if, for any proposition $p$, having $\phi$ toward $p$ commits you to the possibility that $p$ is false, then, for any false proposition $q$, having $\phi$ toward $q$ does not make it the case that you are mistaken.

CCB is, I think, beyond question. And CPF and MPA are both plausible. But I will argue in the next section that MPA is false.

---

**5. Response to Ross and Schroeder’s Correctness Objection**

Consider what high confidence amounts to on the account of confidence I have defended in Chapter 3. The highest levels of confidence in $p$ are all states of *doubtlessness* about $p$. Inhibition of emotional responses to $p$ vanishes at these levels of confidence. Similarly for inhibition of the tendency to use $p$ as a premise in reasoning. The subject refrains from hedging assertions that $p$—perhaps even adding reinforcers. There is a tendency to intense surprise at conclusive evidence against $p$. The decision weight attached to $p$ is very high. These dispositions all sound like ways of favoring $p$—
ways of being committed to \( p \). Where in this picture is there anything that commits the subject to the possibility that not-\( p \)?

The only plausible candidate, I think, is decision weight. If I attach a decision weight of less than 100% to \( p \), then I am in some way covering my bases. Or, to switch metaphors, I’m refusing to put all my eggs in the \( p \)-basket. I thereby acknowledge that \( p \) could be false. If non-maximal confidence in \( p \) commits us to the possibility that not-\( p \), it is in virtue of involving a non-maximal decision weight.

Next question: where in the picture of belief that I have offered in Chapter 1 is there anything that makes you wrong about \( p \) when you believe \( p \) and \( p \) is false? One excellent candidate is the disposition to assert (sincerely) that \( p \) in appropriate circumstances. After all, false assertions are wrong, mistaken, incorrect. Perhaps the tendency to use \( p \) as a premise in reasoning is another good candidate. Or perhaps the tendency to feel as if \( p \)—to be glad that \( p \) if one desires that \( p \), to regret be that \( p \) if one takes \( p \) to be regrettable, etc.

The thing to notice is that all of these candidates are present also in very high (even if non-maximal) degrees of confidence. Again, the highest degrees of confidence are states of doubtlessness, where hedging gives way to unqualified (or reinforced) assertion, where feeling as if becomes uninhibited, where the tendency to use as a premise becomes uninhibited, and so on.

Here is the upshot. What makes it the case that you are highly, but non-maximally, confident that \( p \) is that you have enough of the relevant dispositions, where these include a disposition (to use a non-maximal decision weight) that commits you to the possibility that not-\( p \), but also the dispositions that make you wrong about \( p \) if \( p \) is
false. High, but non-maximal, credence in $p$ both commits you to the possibility that not-$p$ and makes you wrong about $p$ if $p$ is false. MPA, then, is false. We might retain a special case of MPA that applies only to single-track relations to a proposition. But belief and high confidence are complex, and this complexity allows commitment to possible falsity to coincide with susceptibility to mistake. I conclude, therefore, that Ross and Schroeder’s Correctness Objection also fails.

6. The Arbitrariness Objection

6.1 Introducing the Arbitrariness Objection

We turn now to an older and more widely used objection to the Threshold View that I will call the “Arbitrariness Objection.” Brian Weatherson puts the argument this way:

[A]ny number $[T_B]$ is bound to seem arbitrary. Unless these numbers are made salient by the environment, there is no special difference between believing $p$ to degree 0.9786 and believing it to degree 0.9875. But if $[T_B]$ is 0.98755, this will be the difference between believing $p$ and not believing it, which is an important difference. (Weatherson 2005: 420)

TVN does not commit its proponents to any particular value for the belief threshold $T_B$. But it does commit one to saying that there is a threshold $T_B$. The trouble is that there is no plausible value for $T_B$. $T_B = 1$ is implausible, because it would imply that there is no belief without absolute certainty. $T_B \leq 0.5$ is implausible, because it would imply that you can’t suspend judgment on $p$ if you are ever so slightly more
confident that $p$ than that not-$p$. So $T_B$ must be some value between 0.5 and 1, exclusive. But pick any value $n$ such that $0.5 < n < 1$. It is implausible that anyone with credence $n - 0.001$ in $p$ does not believe $p$, while anyone with credence $n + 0.001$ in $p$ does believe $p$. Belief and non-belief are too dissimilar from each other to maintain the sharp boundary that TVN seems to require.

### 6.2 A Defense of TVN against the Arbitrariness Objection

Formal epistemologists often represent degrees of confidence numerically on a scale from 0 to 1. But one can question both what this way of representing confidence presupposes and what it suggests about confidence. One presupposition involved in representing confidence this way is that there is a maximum degree of confidence and a minimum degree of confidence. As noted in §5 above, this presupposition is not beyond question.

One thing that is not presupposed but is suggested by the zero-to-one scale for confidence is that there are continuum-many possible degrees of confidence. That is not to say that human beings are capable of instantiating continuum-many degrees of confidence, only that continuum-many degrees of confidence are possible. Those who use the zero-to-one scale to represent confidence are not forced to make this assumption about confidence, but there is a certain temptation to it inherent in the zero-to-one scale.

It would be a mistake to beg the question whether there are continuum-many possible degrees of confidence, for it is a substantive philosophical question. We can at least entertain a quite opposite view: namely, that there are in fact only a handful of
possible degrees of confidence. Suppose I maintain that there are just 11 degrees of
certainty one can have in a proposition $p$; you can be

a) absolutely certain that $p$
b) exceedingly confident that $p$
c) mildly doubtful that $p$
d) somewhat confident that $p$
e) marginally more confident that $p$ than that not-$p$
f) in equipoise between $p$ and not-$p$
g) marginally more confident that not-$p$ than that $p$
h) somewhat confident that not-$p$
i) mildly doubtful that not-$p$
j) exceedingly confident that not-$p$
k) absolutely certain that not-$p$.

Confidence is not a continuum but instead comes in these 11 discrete levels.
There is no degree of confidence in-between equipoise and marginal confidence or
between near-certainty and absolute certainty.

If I take this view, I do not have to repudiate the zero-to-one model for
confidence. I might just use 11 values in the interval $[0,1]$—perhaps 0, 0.1, 0.2, 0.3, . . . ,
0.9, and 1. But I will in any case have to deny that every value in the interval $[0, 1]$ could
represent a distinct degree of confidence.
With this “sparse” view of confidence on the table, let us return to the Arbitrariness Objection. The proponent of the sparse view will not agree with Weatherson that, given the Threshold View, the difference between credence 0.9786 and credence 0.9875 could be the difference between belief and non-belief. On the sparse view, there is no such thing as credence 0.9786 or credence 0.9875. There is credence 1, and there is credence 0.9; but there’s nothing in-between.\footnote{The proponent of the sparse view might allow that one could assign the numbers 0.9786 and 0.9875 to distinct degrees of confidence. One might let 1 represent absolute certainty, 0.9875 represent near-certainty, 0.9786 represent fair confidence, and then assign the rest as before (0.7 to being somewhat confident, 0.6 to marginal confidence, 0.5 to equipoise, and so on). We can represent anything by anything we please; we could let the Moon represent absolute certainty, the number 113 represent near-confidence, and the Sun represent fair confidence, if we were so inclined. But we should not then read off relations between the signified from relations between the signs. If we have arbitrarily assigned 0.9875 to near-certainty and 0.9786 to fair confidence, we shouldn’t then assume that there’s little difference between near-certainty and fair confidence. We’d do just as well if, having arbitrarily assigned the Moon to absolute certainty and the Sun to fair confidence, we then assumed that absolute certainty and fair confidence must be very far from each other because, after all, the Sun and Moon are.}

The sparser levels of confidence turn out to be, the more plausible it becomes to maintain that the difference between non-belief and belief is just the difference between one level of confidence and another. The Arbitrariness Objection therefore needs supplementation if it is to refute the Threshold View. We would need good reason to think that confidence is sufficiently fine-grained to underwrite the Arbitrariness Objection. And it would be hard to settle the question of the grain of confidence apart from an exploration of the nature of confidence.
7. Vagueness and the Arbitrariness Objection

7.1 Vague Thresholds

In Chapter 6 I will argue that confidence is indeed sparse in a way that undermines the Arbitrariness Objection. But for now I’m going to put that response aside in the interest of discussing a more standard response to the objection.

None of the most prominent proponents of the Threshold View has endorsed TVN. They have not claimed that there is some sharp, invariant threshold separating levels of confidence that qualify as belief from levels of confidence that do not. They have allowed that the threshold is either variable or “fuzzy” or both. Here I will be focusing on the idea of a “fuzzy” threshold.

What does it mean to suggest that the belief threshold is “fuzzy”? Fuzziness in the sense at issue here is the opposite of “sharpness.” Fuzziness and sharpness are properties of boundaries, and the type of boundary at issue here is the boundary between cases to which a predicate (“believes”) applies and cases to which it does not apply.

Philosophers who study vagueness distinguish between predicates that have “fuzzy boundaries” and predicates that admit of “borderline cases.” Suppose I drive up in an aqua-colored car, and you say, “You have a blue car.” Your statement is neither clearly true nor clearly false. And we cannot settle the question whether your statement is true by taking a closer look at the car, or by comparing its color to other shades. No amount of inquiry will settle the question whether it is true that my car is blue. My car is a borderline case with respect to the predicate “blue.”

---

173 See Keefe and Smith (1996: 7-8).

216
In a borderline case, no amount of inquiry will settle the question whether the predicate applies to the case. That is not to say that the predication is neither true nor false in such cases. That’s one view about borderline cases, but it’s a controversial one. Some philosophers think that there is a fact of the matter about whether the predicate applies in a borderline case, but that this fact is beyond our grasp. These “epistemicists” nevertheless recognize the existence of borderline cases; they just construe the category of borderline cases epistemically rather than alethically.

Wherever there are fuzzy boundaries, there are borderline cases, but not necessarily vice versa. Fuzzy boundaries are features of “sorites” series. These series are named for the paradigm example of such a series. Suppose there is a row of 1 million boxes. In the first box, there is a heap (Greek *sorites*) consisting of 1 million grains of sand. In the second box, there is a heap consisting of 999,999 grains of sand. And in each subsequent box there is a heap with one less grain than the one before. Clearly, there is a heap in the first box. Clearly, there is no heap in the last box. But, plausibly, for any box in the row, if there is a heap in that box, then there is a heap in the next box.

More generally, a sorites series for a predicate \( F \) is a series of objects \( x_1 \ldots x_n \) such that \( F \) clearly applies to \( x_1 \), \( F \) clearly does not apply to \( x_n \), and it is plausible that for any \( i \), if \( F \) applies to \( x_i \), then \( x \) applies to \( x_{i+1} \). Because of this third condition on a sorites series, there is no point at which we can plausibly draw a sharp boundary between the objects in the series that are \( F \) and the objects in the series that are not-\( F \). The boundary between \( F \)'s and non-\( F \)'s is fuzzy.

When a boundary is fuzzy, there are borderline cases. Again, a fuzzy boundary is a feature of a sorites series. A sorites series for the predicate \( F \) starts out with \( F \)'s and
ends up with non-\(F\)’s. If none of the objects in the series is a borderline case, then at some point there will be an object that is clearly an \(F\) followed by an object that is clearly not an \(F\). But if there’s such an abrupt change from clear cases of \(F\)’s to clear cases of non-\(F\)s, then the boundary between \(F\)’s and non-\(F\)’s isn’t fuzzy—it’s sharp. So fuzzy boundaries require borderline cases.

The reverse isn’t (or isn’t clearly) true. Some predicates admit of borderline cases but do not (or do not obviously) give rise to sorites series with fuzzy boundaries. Whether an object is a piece of art admits of borderline cases. But there doesn’t seem to be any dimension along which a boundary is to be drawn, whether fuzzy or sharp. Other candidates for predicates that admit of borderline cases but not fuzzy boundaries include *being a house, being alive, and being human.*

Predicates that admit of borderline cases are said to be “vague.” This is of course not the only sense of the term “vague.” There is also vagueness in the sense of underspecificity. Suppose you ask me my age and I respond, “More than 10 and less than 100.” Slightly annoyed, you tell me that my response is unhelpfully vague. Your complaint has nothing to do with borderline cases; you are complaining about underspecificity.

From this point on I will be defending only threshold views that allow “believes” to be a vague predicate—one that admits of borderline cases. Proponents of the Threshold View have tended to agree that the confidence spectrum is a sorites series and that there is a fuzzy boundary in this series between belief and non-belief. There is no precise belief threshold \(T_B\). The threshold is fuzzy.
We need a new formulation to capture this more sophisticated version of the Threshold View. In the Introduction, I put it this way (for the invariantist version—we’ll leave aside contextualism for now):

The vagueness-supporting invariantist will say that there will be some level of confidence \( T_B \) such that levels of confidence significantly above \( T_B \) are clearly determinates of belief, levels of confidence significantly below \( T_B \) are clearly not determinates of belief, and levels of confidence near \( T_B \) are borderline cases of determinates of belief.

This was admittedly something of a fudge. What is it, after all, for a level of confidence to be “near” \( T_B \) or “significantly above” or “significantly below” \( T_B \)?

Here is a first stab at a precise formulation:

\( \text{TVV}_1 \) There is an interval \([T_W, T_B]\) such that, for any proposition \( p \), any degree of confidence below \( T_W \) in \( p \) is a clear case of not believing \( p \), any degree of confidence above \( T_B \) in \( p \) is a clear case of believing \( p \), and any degree of confidence in \( p \) in the interval \([T_W, T_B]\) is a borderline case of belief.

But there is reason to think \( \text{TVV}_1 \) is not quite right. Suppose for illustration that \( T_W = 0.75 \) and \( T_B = 0.95 \). That is, any credence below 0.75 is a clear case of non-belief, any credence above 0.95 is a clear case of belief, and any credence in-between is a borderline
case. But now consider credence 0.95 and credence 0.96. Is it really plausible that credence 0.96 is a clear case of belief, but credence 0.95 isn’t?

In fact, one can generate a sorites series for clear cases of belief. Credence 1.0 is a clear case of belief if anything is. For any \( n \), if credence \( n \) is a clear case of belief, then credence \( n - 0.001 \) is a clear case of belief. But credence 0.5 isn’t a clear case of belief. The predicate “clear case of belief” seems just as good a candidate for having a fuzzy boundary as “belief” is.

As many philosophers have observed, there seems to be higher-order vagueness. There are shades that are clearly borderline cases of blue (e.g. aqua), but also shades that are borderline cases of borderline cases of blue (e.g. turquoise). And if there are credences that are borderline cases of belief, there will be some credences that are clearly borderline cases and others that are borderline borderline cases of belief. It will not be plausible to reject a sharp belief threshold, only to embrace a sharp cutoff between clear cases and borderline cases of belief.

The following formulation of the Threshold View avoids the worry about higher-order vagueness:

**TVV** There is a degree of confidence \( c_1 \) such that, for any proposition \( p \), every case of having \( c_1 \) toward \( p \) is a clear case of not believing \( p \); there is a degree of confidence \( c_2 \) such that, for any proposition \( p \), every case of having \( c_2 \) toward \( p \) is a clear case of believing \( p \); for any degrees of confidence \( c \) and \( c^* \) and for any proposition \( p \), if some case of having \( c \) toward \( p \) is a clear case of believing \( p \) and \( c \) is lower than \( c^* \), then every case of having \( c^* \) toward \( p \) is a clear case of
believing \(p\); and, for any degrees of confidence \(c\) and \(c^*\) and for any proposition \(p\), if some case of having \(c^*\) toward \(p\) is a clear case of not believing \(p\) and \(c\) is lower than \(c^*\), then every case of having \(c\) toward \(p\) is a clear case of not believing \(p\).\(^{174}\)

TVV asserts that there are credences that make for clear cases of belief and credences that make for clear cases of non-belief. It allows for (though it does not assert) the existence of a fuzzy boundary with credences that are borderline cases of belief. And it asserts further that the clear cases of belief are congregated on one side of the (possibly fuzzy) boundary and the clear cases of non-belief are congregated on the opposite side of the (possibly fuzzy) boundary. For any credence that makes for a clear case of belief, every higher credence also makes for clear cases of belief. For any credence that makes for a clear case of non-belief, every lower credence also makes for clear cases of non-belief. But for all TVV says, there may be no sharp boundary where the clear cases of belief end and the borderline cases begin. There may be many credences that make for cases that are neither clearly borderline cases nor clearly clear cases of belief. TVV will be the focus of the rest of this chapter and will loom large in the final chapter, as well.

7.2 TVV and the Arbitrariness Objection

According to the Arbitrariness Objection, the Threshold View is implausible because any choice of credence as the belief-withholding threshold would be intolerably

---

\(^{174}\) Here I am indebted to Bradley Rettler and Jeff Speaks for helpful discussion.
arbitrary (or, any choice of Threshold other than 0.5 and 1, which are implausible for other reasons). But TVV does not claim that there is some one credence that is the belief-withholding Threshold. TVV claims that some credences are definitely above the threshold and some credences are definitely below the threshold. But TVV allows the boundary in-between to be fuzzy. Belief may give rise to a sorites series, as tallness, baldness, and blueness do. Vague predicates are ubiquitous in our natural languages. Would it be any surprise if “believes” turned out to be vague? If TVN fails, this is hardly surprising, since TVN naïvely takes belief to have sharp boundaries. But the Arbitrariness Objection doesn’t defeat the Threshold View; it just points us toward the appropriately sophisticated version of the Threshold View that we have in TVV.

8. Augmenting the Arbitrariness Objection

8.1 Weatherson’s Worry

I have just given a fairly standard response to the Arbitrariness Objection: the threshold is fuzzy, in which case the difference between clear cases of belief and clear cases of non-belief can be as great as we’d like to suppose. But Brian Weatherson has recently voiced dissatisfaction with this response. Here is Weatherson’s complaint:

[I]t’s not clear how this [response] helps. On an epistemic theory of vagueness, there is still a number such that degrees of belief above that count, and degrees below that do not, and any such number is bound to seem unimportant. On supervaluational theories, the same is true. There won’t be a determinate number, to be sure, but there will be a number, and that seems false. My preferred degree of belief theory of vagueness as set out in Weatherson (2005) has the same consequence. Hunter [(1996)] defends a version of the threshold view combined
with a theory of vagueness based around fuzzy logic, which seems to be the only theory that could avoid the arbitrariness objection. But as Williamson (1994: Ch. 4) showed, there are deep and probably insurmountable difficulties with that position. So I think the vagueness response to the arbitrariness objection is (a) the only prima facie plausible response and (b) unsuccessful.

While positing a vague threshold may look, on the face of it, like a good response to the Arbitrariness Objection, Weatherson thinks the devil is in the details. The proponent of TVV needs there to be some plausible account of vagueness that renders this response to the Arbitrariness Objection viable. And Weatherson is skeptical that any account of vagueness can do the job.

I mentioned the epistemic theory of vagueness—“epistemicism”—above. The epistemicist holds that vagueness is merely a matter of ignorance. Our ability to set boundaries by linguistic practice outstrips our ability to discover those boundaries. There is a sharp boundary between blue and green, but we’ll never discover which side of the boundary aqua falls on. There is a precise number of hairs (or proportion of scalp coverage) that makes the difference between baldness and non-baldness, but we’ll never identify it. On the epistemicist view, then, asserting that “believes” is vague does not let us do away with a sharp threshold between belief and non-belief. If epistemicism is the correct account of vagueness, then TVV does not, after all, allow us to escape the Arbitrariness Objection.

Supervaluationism is one of the main rivals to epistemicism. The supervaluationist holds that in borderline cases, the predication of a vague term is neither true nor false. Every vague predicate has a set of “admissible precisifications.” We can think of a precisification as simply a total function from objects in the world to truth-
values (that is, a function that maps each object in the world either to “True” or to “False,” leaving no objects unmapped). For a vague predicate $F$, each *admissible* precisification $F_i$ maps to “True” every object that is clearly $F$ and maps to “False” every object that is clearly not-$F$. If a predicate had only a single borderline case, it would have only two admissible precisifications—one mapping the borderline case to “True,” the other mapping the borderline case to “False.” Typical vague predicates will have *many* admissible precisifications. One further requirement for an admissible precisification $F_i$ for a predicate $F$ is that $F_i$ never maps a better candidate for an $F$ to “False” while mapping a worse candidate for an $F$ to “True.” For example, if Barney and Fred are borderline bald, but Barney is balder than Fred, then no admissible precisification of “bald” will map Barney to “False” and Fred to “True.” With the notion of admissible precisifications in hand, the supervaluationist then claims that a sentence is true if and only if it is true for all admissible precisifications of its vague predicates, false if and only if it is false for all admissible precisifications of its vague predicates, and neither true nor false otherwise. Suppose you have a car that is solid royal blue and I have a car that is aqua. It will be true on every admissible precisification of “blue” that your car is blue. So, according to the supervaluationist, it is true that your car is blue. It will be true on some admissible precisifications of “blue” that my car is blue and false on others. So, according to the supervaluationist, it is neither true nor false that my car is blue.

Weatherson points out that the supervaluationist is committed to saying that belief has a sharp threshold in the confidence spectrum. Consider the sentence “There is some degree of confidence such that every higher degree of confidence is a case of belief and every degree of confidence that is no higher is a case of non-belief.” The sentence asserts
a sharp boundary between belief and non-belief. But by the supervaluationist’s lights, the sentence is true. Keep in mind that it is a constraint on an admissible precisification $B_i$ of “believes” that $B_i$ never maps a better candidate for belief to “False” while mapping a worse candidate for belief to “True.” And every precisification $B_i$ for “believes” maps each degree of confidence either to “True” or to “False.” So every admissible precisification $B_i$ for “believes” will impose a sharp boundary between degrees of confidence that are cases of belief and degrees of confidence that aren’t. But then it is true on every admissible precisification that some degree of confidence is such that every higher degree of confidence is a case of belief and every degree of confidence that is no higher is a case of non-belief. The supervaluationist is committed to a sharp threshold.

Weatherson concedes that fuzzy logic would enable proponents of the Threshold View to elude the Arbitrariness Objection. Fuzzy logic allows sentences to be assigned degrees of truth. An assignment of truth-values to the sentences of a language need not assign only the values “True” and “False”; it can assign any number from 0 to 1 to represent the degree to which a sentence is true. Fuzzy logic suggests a way of dealing with vagueness. When a sentence predicates some vague term $F$ of an object, the sentence’s degree of truth will be a function of the degree to which the object is a good candidate for an $F$. Again, if your car is solid royal blue and mine is aqua, then “Your car is blue” (out of my mouth when speaking to you) will be assigned a higher degree of truth than “My car is blue” (out of my mouth).

Suppose credence $c$ is no better a candidate for belief than for non-belief. Then, using the apparatus of fuzzy logic, we might say that it is only 50% true that $c$ is a case of
belief and 50% true that \( c \) is a case of non-belief. It will be more true of higher degrees of confidence that they are cases of belief, less true of lower degrees of confidence. As we move up the confidence spectrum, there is no sharp boundary where cases of non-belief give way to cases of belief. Instead, we have a smooth transition from cases that are not at all truly describable as cases of belief to cases that are perfectly truly describable as cases of belief.

\[ \text{Notice that the following elegant way of relating credences to degrees of truth must be rejected: for any credence level } n, \text{ for } 0 < n < 1, \text{ the degree to which it is true that credence level } n \text{ is a case of belief is } n. \text{ This must be rejected because 50% confidence is a clear case of non-belief, not an equally good candidate for belief and non-belief. The degree to which it is true that 50% confidence is a case of belief is not 0.5, but 0.} \]

\[ \text{And what of the sentence “There is some degree of confidence such that every higher degree of confidence is a case of belief and every degree of confidence that is no higher is a case of non-belief”? In standard fuzzy logic, for any } \Phi, \text{ the truth value of } \exists x \Phi x \text{ is the maximum of all the truth values of } \Phi x^n, \text{ for all } x_i \text{ in the domain of discourse. For any } \Phi, \text{ the truth value of } \forall x \Phi x \text{ is the minimum of all the truth values of } \Phi x^n, \text{ for all } x_i \text{ in the domain of discourse. And for any } \Phi \text{ and } \Psi, \text{ the truth value of } \Phi \& \Psi \text{ is the minimum of the truth values of } \Phi \text{ and } \Psi. \]

So to evaluate “There is some degree of confidence such that every higher degree of confidence is a case of belief and every degree of confidence that is no higher is a case of non-belief,” we proceed as follows. Take the first degree of confidence \( c_1 \) in the domain of discourse. Now, consider the set \( S \) of all values \( t \) such that either, for some degree of confidence \( c^{'} \) greater than \( c_1 \), \( t \) is the degree to which \( c^{'} \) is a case of belief is true or, for some degree of confidence \( c^{'} \) no greater than \( c_1 \), \( t \) is the degree to which \( c^{'} \) is a case of non-belief is true. Find the infimum (the least value) of that set. Include that value in set \( S^* \). Now proceed to the next degree of confidence \( c_2 \) in the domain of discourse. And repeat the process. That is, consider the set \( S \) of all values \( t \) such that either, for some degree of confidence \( c^{'} \) greater than \( c_2 \), \( t \) is the degree to which \( c^{'} \) is a case of belief is true or, for some degree of confidence \( c^{'} \) no greater than \( c_2 \), \( t \) is the degree to which \( c^{'} \) is a case of non-belief is true. Find the infimum of that set. Include that value in set \( S^* \). And repeat for every other degree of confidence in the domain of discourse. Finally, take the supremum (greatest value) of \( S^* \). That is the degree of truth of the sentence “There is some degree of confidence such that every higher degree of confidence is a case of belief and every degree of confidence that is no higher is a case of non-belief.”

It can now be seen that the sentence in question cannot be true to degree 1 if “belief” is vague. Let \( c \) be an arbitrary degree of confidence. Now we run through the procedure above. Consider the set \( S \) of all values \( t \) such that either, for some degree of confidence \( c^{'} \) greater than \( c \), \( t \) is the degree to which \( c^{'} \) is a case of belief is true or, for some degree of confidence \( c^{'} \) no greater than \( c \), \( t \) is the degree to which \( c^{'} \) is a case of non-belief is true. Since “belief” is vague, either (a) some degree of confidence \( c_1 \) that is higher than \( c \) is a borderline case of belief, or (b) some degree of confidence \( c_2 \) that is no higher than \( c \) is a borderline case of belief. If (a), then it is true to some non-maximal degree that \( c_1 \) is a case of belief, in which case \( S \) includes a value below 1. If (b), then it is true to some non-maximal degree that \( c_2 \) is a case of non-belief, in which case, again, \( S \) includes a value below 1. So the infimum of \( S \) must be less than 1. And \( c \) was an arbitrary level of confidence. So all the elements of \( S^* \) will be less than 1, in which case the

\[ \text{226} \]
But Weatherson follows Timothy Williamson in thinking that this sort of account of vagueness is hopeless. Williamson’s (1994: ch. 4) criticisms of the fuzzy logic approach to vagueness need not detain us, however. Let’s assume for the sake of argument that the fuzzy logic approach is hopeless and that either epistemicism or supervaluationism is the correct view of vagueness, in which case the TVV has the consequence that there is a sharp cutoff between belief and non-belief in the midst of the borderline cases.

8.2 A Response to Weatherson’s Worry

I must confess that I do not find it altogether easy to see just what it is that Weatherson finds objectionable about embracing TVV to address the Arbitrariness Objection. I am happy to grant that we must embrace epistemicism or supervaluationism or some other view that, when conjoined with TVV, has the consequence that there is a sharp belief threshold. And I agree that, given such a position on vagueness, TVV has a very bizarre consequence. But this in itself doesn’t seem like much of a problem for TVV, since the bizarre consequence seems to be of a piece with many other bizarre consequences of the take on vagueness that we are assuming—consequences that are quite independent of the Threshold View.

Epistemicists and supervaluationists must endorse such claims as the following:

\[
\text{supremum of } S^* \text{ will be less than 1. So, given that “belief” is vague, it cannot be maximally true that there is a sharp belief threshold.}
\]
1) In any conversational context, there is a particular number $n$ such that “I am bald” is true when uttered in that context by anyone with fewer than $n$ hairs on their head and false when uttered in that context by anyone with more than $n$ hairs on their head.

2) In any conversational context, there is a particular number of seconds such that “I am old” is true when uttered in that context by anyone who has lived more than that number of seconds and false when uttered in that context by anyone who has lived fewer than that number of seconds.

3) In any conversational context, there is a particular number such that “I am tall” is true when uttered in that context by anyone whose height in millimeters exceeds that number and false when uttered in that context by anyone whose height in millimeters does not exceed that number.

4) In any conversational context, there is a particular number such that “It is hot in here” is true when uttered in that context if the room temperature in Celsius exceeds that number and false when uttered in that context if the room temperature in Celsius does not exceed that number.

Such statements are the stuff of philosophical comedy. It is not easy to take seriously a view that has such consequences. But we are assuming for the sake of argument that
either epistemicism or supervaluationism is correct, in which case (1)-(4) and many similarly absurd-sounding statements are true.

The world is a strange place if there are sharp cutoffs for baldness, oldness, tallness, hotness, etc. Sharp cutoffs are ubiquitous, given epistemicism or supervaluationism. To Weatherson’s complaint, I am inclined to respond, “What’s one more sharp cutoff in a world replete with them?”

So just what is Weatherson worried about? The best hint I find in Weatherson (2005) is the assertion that the difference between believing a proposition and not believing is an important difference. The worry seems to be that we forfeit the importance of the difference between belief and non-belief if we suppose one level of confidence to be a case of belief and an abutting level of confidence to be a case of non-belief. The difference between two abutting levels of confidence is just too trivial to underwrite the importance of the difference between belief and non-belief.

But if there is an issue here, couldn’t the same issue be raised for a multitude of other properties whose presence makes an important difference? For instance, being courageous is importantly different from not being courageous. Yet courage comes in degree, and it is vague how much courage one must have to qualify as “courageous.” Epistemicism and supervaluationism would have the consequence that there is some sharp boundary between levels of courage that qualify one as “courageous” and abutting levels of courage that would not. And the same is true of many other important qualities.

So I do not find any special problem for the belief threshold. We get the same surprising consequences for a multitude of important qualities that represent the high end of some spectrum or other. I take it the lesson is not that we should reject a threshold
view of these qualities. Perhaps the lesson is that we have further reason to question epistemicism and supervaluationism and to give fuzzy logic another chance. Or perhaps the lesson is just that there is one more way in which the world is strange—not one dissimilar from other ways that, according to the epistemicist and supervaluationist, the world is strange, but one that had gone unnoticed. In any case, we do not have good reason here to reject the Threshold View.177

177 Something similar should be said in response to a related objection articulated by Keith Frankish (and inspired by Stalnaker (1984: 91)). Assuming a sharp belief threshold, Frankish (2009: 80-81) argues that whereas the acquisition of a belief makes a significant differences to one’s psychological and behavioral dispositions, a change from a credence just below the belief threshold to just above it will not make much psychological or behavioral difference. This objection, like Weatherson’s, would prove too much. A change from being unintelligent to being intelligent makes a quite significant psychological and behavioral difference. But a threshold view of intelligence is all but irresistible; to be intelligent is just to be high enough on the intelligence scale. So I do not take Frankish’s objection to be a problem for the Threshold View, for the same reasons that Weatherson’s isn’t.
CHAPTER 5

EPISTEMOLOGICAL OBJECTIONS TO THE THRESHOLD VIEW

1. Introduction

This dissertation is motivated partly by the intrinsic interest of the question of how belief and confidence are related and partly by the role that the Threshold View could play in settling controversial epistemological questions. The Threshold View has enjoyed as much attention as it has mainly because of its epistemological consequences. Recall (from the Introduction) the three epistemological objections that highlight these epistemological consequences. There is pragmatic encroachment on epistemically justified belief, but not on epistemically justified (high) confidence. But there couldn’t be pragmatic encroachment on one but not the other if the Threshold View were true. That’s the Pragmatic Encroachment Objection. Purely statistical evidence never justifies belief, but it can justify high confidence. But it would have to justify both or neither if the Threshold View were true. This is the Statistical Evidence Objection. And if the Threshold View were correct, it would be rational, for every ticket $t_i$ in a large, fair lottery, to believe that $t_i$ won’t be drawn (since it would be rational to be highly confident that $t_i$ won’t be drawn). But then it would be rational to believe each member of a set of propositions one knows to be inconsistent. Such inconsistency is never rational, however, so the Threshold View is mistaken. That’s the Lottery Objection.
These objections point up conflicts between the Threshold View and certain combinations of epistemological claims. Each objection combines an epistemological claim about confidence with an epistemological claim about belief. All three employ something in the vicinity of a proportioning principle for confidence—roughly, that rational confidence is proportionate to the strength of one’s evidence. All that’s really needed is a principle concerning the special case of high confidence:

**Confidence Sufficiency**  
It is rational to be highly confident of a proposition for which one has very strong (even if purely statistical) evidence.

Then the Pragmatic Encroachment objection adds

**Pragmatic Encroachment**  
Stakes make a difference to epistemic justification of belief.

The Statistical Evidence Objection adds

**Ban on Purely Statistical Justification (BPSJ)**  
A subject is never justified in believing a proposition on the basis of purely statistical evidence.

And the Lottery Objection adds either
Consistency  Inconsistent beliefs cannot all be rational, at least not where the subject recognizes (or should recognize) that they are inconsistent

or

Conjunction Rule  For any subject $s$ and propositions $p$ and $q$, if it is rational for $s$ to believe $p$ and it is rational for $s$ to believe $q$, then it is rational for $s$ to believe $(p \& q)$.

If the Threshold View is true, then either Confidence Sufficiency must be rejected, or all of Pragmatic Encroachment, BPSJ, Consistency, and the Conjunction Rule must be rejected.

It is at least a little odd, though, that epistemologists have found the epistemological objections to the Threshold View so persuasive. After all, Pragmatic Encroachment, BPSJ, Consistency, and the Conjunction Rule are all highly controversial claims, quite independently of the Threshold View. Purism remains the orthodoxy in epistemology; pragmatic encroachment is the challenger. The claim that one should never believe on purely statistical evidence is shocking and counterintuitive (Sherlock Holmes, hardly a paradigm of irrationality, does it all the time!). And quite independently of the Threshold View, the Conjunction Rule (or Consistency) leads to the Preface Paradox, as well as to a version of the Lottery Paradox.

The objectors seem to have assumed that if the Threshold View, together with the epistemic principles employed in these epistemological objections, generates paradox,
then the Threshold View is the weak link and the best candidate for rejection. But since the non-epistemological objections have failed, it is up to the epistemological objections to overcome whatever positive case can be made for the Threshold View. In the final chapter we’ll take a closer look at what there is to be said in favor of the Threshold View. The task of the present chapter is to examine the case for the epistemological claims that have been advanced against the Threshold View.

2. Pragmatic Encroachment

2.1 Introducing Purism

Pragmatic encroachment flies in the face of the “purist” orthodoxy in epistemology. According to purism, the only determinants of epistemic status are truth-relevant factors. What makes a factor truth-relevant is, roughly, its contribution to the aim of obtaining truth and avoiding falsehood. Examples of truth-relevant factors include truth itself, counterfactual relations to the truth, reliability of belief-forming processes, and evidence, among other things. Truth-relevant factors do not include pragmatic factors. The importance of being right about something is not truth-relevant, at least not in the sense that is germane to purism.

One can be a purist about particular epistemic statuses or a purist across the board. The purist about knowledge holds that only truth-relevant factors determine whether a given belief qualifies as knowledge. The purist about epistemic justification

---

holds that only truth-relevant factors determine whether a given belief is epistemically justified. The general purist accepts purism about knowledge, epistemic justification, and all other epistemic statuses. General purism is the orthodoxy.

Why should general purism have the status of orthodoxy? Many epistemologists simply find themselves unable to imagine knowledge or epistemic justification or rationality being gained or lost through changes that are in no way truth-relevant. That is to say, many epistemologists have purist intuitions about each epistemic status individually. For other epistemologists, purism is an inescapable consequence of their conception of the epistemic domain. William Alston demarcates the epistemic domain this way:

> Epistemic evaluation is undertaken from what we might call the “epistemic point of view.” That point of view is defined by the aim at maximizing truth and minimizing falsity in a large body of beliefs. (Alston 1989: 83)

If epistemic statuses are ways of doing well vis-à-vis these aims, then it seems that only truth-relevant factors can determine whether an epistemic status is achieved.¹⁷⁹

---

¹⁷⁹ One might wonder whether impurism could be squared with the truth-related conception of the epistemic by maintaining that stakes are what determine the appropriate balance between the goals of acquiring truth and avoiding error. But Nevin Climenhaga has pointed out to me a serious problem with this proposal. We all think that if one’s evidence favors not-\(p\) over \(p\), then one is not epistemically justified in believing \(p\). But if the stakes are allowed to determine the relative weights of the epistemic goals (truth acquisition or error avoidance), it is very hard to see why there couldn’t be cases in which the stakes are such that, for some proposition \(p\), it is no big deal if one believes \(p\) falsely or fails to believe not-\(p\) truly, but it is a very big deal if one fails to believe \(p\) truly. In that case, one could be epistemically justified in believing a proposition when one’s evidence favors its denial.

Pascal’s Wager provides a helpful illustration. Our evidence might favor the proposition that God does not exist over the proposition that God exists. But we have little to gain by disbelieving (and perhaps much to lose if there’s a hell), so if we have quite a lot to gain by believing, the relative weights of the stake-determined epistemic goals may rationalize believing contrary to the evidence.
2.2 A Challenge to Purism

There have, however, been some important challenges to the purist orthodoxy in recent years. Jeremy Fantl and Matthew McGrath (2002, 2007, 2009) have led the charge, and John Hawthorne (2004) and Jason Stanley (2005) have been their most prominent allies. I’ll focus on Fantl and McGrath’s arguments here.

Recall the train case I used (Introduction §3.1) to present the Pragmatic Encroachment Objection. The Inquirer desperately needs to get the train to Belmont station and asks a passerby whether the Brown Line stops at Belmont. The passerby casually says it does. The Eavesdropper overhears the exchange but has no need to get to Belmont. Intuitively, the passersby’s testimony provides enough evidence to make it reasonable for the Eavesdropper to believe the Brown Line stops at Belmont, but not enough evidence to make it reasonable for the Inquirer so to believe.

Fantl and McGrath (2002) introduced a version of the train case to challenge purism about epistemic justification. Their primary target is evidentialist purism—the view that epistemic justification is determined by evidence alone (where “evidence” is

An amendment to the proposal that avoids this specific worry is that the value of believing $p$ if $p$ is true must be the same as the value of believing not-$p$ if $p$ is false (and similarly for the value of avoiding error). Then there is no advantage to believing contrary to the evidence. However, there is a related problem. If my evidence supports $p$ and not-$p$ equally, then I am not epistemically justified in believing $p$; I should suspend judgment. But if the stakes lend truth acquisition greater weight than error avoidance, then I should believe $p$ (or not-$p$—it doesn’t matter) rather than suspend judgment. (Besides this, it is not clear what could motivate the amendment. If stakes determine whether truth acquisition is better than error avoidance, why couldn’t the stake make acquiring the truth that $p$ more important than acquiring the truth that not-$p$?) For a related criticism of a proposal in the vicinity, see DePaul (2004).

See also Hawthorne and Stanley (2008). For an earlier attack on purism about knowledge, see Williams (1996).
not a technical term, but is to be understood in a pre-theoretical way). But their challenge is meant to generalize to all forms of purism about epistemic justification.

For Fantl and McGrath, the train case is little more than a shot across the bow. They are wary of depending on our intuitions about that kind of case. Their aim is to *vindicate* those intuitions.

The vindication proceeds by converting what seems a valid argument pattern into a principle. The argument pattern is as follows:

1) $s$ is justified in believing that $p$.
2) $s$ is rational to prefer $\phi$ to $\psi$, given $p$.

*Therefore,*

C) $s$ is rational to prefer $\phi$ to $\psi$.

Suppose, for example, that it is rational for me to prefer having an indoor wedding to having an outdoor wedding, given that it will rain on my wedding day. And suppose I am justified in believing that it will rain on my wedding day. Then surely it is rational for me to prefer having an indoor wedding to having an outdoor wedding.

Since this argument pattern seems valid, we should accept the corresponding principle:

**PC$_J$**  For any subject $s$ and proposition $p$, $s$ is justified in believing $p$ only if, for any states of affairs $\phi$ and $\psi$, if $s$ is rational to prefer $\phi$ to $\psi$, given $p$, then $s$ is rational to prefer $\phi$ to $\psi$.
$PC_J$ supplies a pragmatic necessary condition on justification. And we can use $PC_J$ to explain why the Inquirer in the train case is not justified in believing that the Brown Line stops at Belmont after asking just one passerby. After all, it is rational for the Inquirer to prefer double-checking to not double-checking; but it is not rational for the Inquirer to prefer double-checking, *given* that the train does stop at Belmont. Given that the train stops at Belmont, it is preferable to stop pester ing passersby, calm down, and get ready to board the train. So, by *modus tollens*, the Inquirer is not justified in believing (after the first inquiry) that the Brown line stops at Belmont. Further evidence is needed before what is preferable *simpliciter* lines up with what is preferable *given* that the Brown Line stops at Belmont.

Since Eavesdropper has no pressing need to get to Belmont, what is preferable for her *simpliciter* (getting on the train without making inquiries) does line up with what is preferable given that the Brown Line stops at Belmont. There is thus no barrier (from $PC_J$, anyway) to saying that she is justified in believing that the Brown Line stops at Belmont. $PC_J$ gives us a way of explaining why the one traveler is not justified in believing something that another traveler with the same evidence is justified in believing. Our intuitions about the train case are thus vindicated, and purism is undermined.

One way to try to save purism would be to say that in cases like the train case *neither* subject is justified in believing. Granted, it is quite rational for the eavesdropper to inquire no further; but her evidence that the Brown Line stops at Belmont isn’t very solid.
But to save purism, this strategy will have to be generalized. It will have to be maintained that it is *impossible* to have a case in which (i) two subjects have the same evidence, (ii) that evidence is strong enough to epistemically justify one of them in believing some proposition \( p \), but (iii) that evidence isn’t strong enough to make the other subject’s rational preferences line up with his rational preferences conditional on \( p \).

Fantl and McGrath point out that this kind of strategy puts us on a short road to skepticism. If we are to avoid skepticism, we must allow that some of our ordinary beliefs are justified. For example, I take it I am justified in believing that I was born in Austin. As evidence I have my birth certificate and my parents’ testimony. This evidence is good enough to justify my belief and to enable me to know where I was born. But it isn’t infallible, and if the question where I was born became important enough, I would be rationally required to seek further verification. Indeed, there is sure to be somebody, somewhere who is facing a decision that is so weighty that they ought to be seeking evidence that is stronger than my evidence that I was born in Austin. Call that person “\( s \),” and call the proposition at issue “\( p \).” \( p \) is “at issue” in the sense that one of \( s \)’s options is better if \( p \) is true, and another option is better if \( p \) is false. Suppose that many lives hang in the balance, that \( s \) has plenty of time to inquire, that the cost of inquiry is significant but not terribly high, and that inquiry is highly likely to yield strong evidence concerning \( p \). Even if \( s \)’s current evidence concerning \( p \) is as strong as my evidence concerning where I was born, \( s \) should prefer to inquire further, given the stakes. But since inquiry has a substantial cost, \( s \) shouldn’t prefer to inquire further, *given* that \( p \). So the preferences \( s \) should have don’t line up with the preferences \( s \) should
have conditional on $p$. By PC$_J$, then, $s$ is not justified in believing $p$, despite having the level of evidence that I have concerning my place of birth.

If we accept PC$_J$ and maintain that I am justified in believing I was born in Austin, then we must acknowledge that *something pragmatic* makes the difference between the evidence required for justification in my case and the evidence required for justification in $s$’s situation. So if we want to maintain purism, we will either have to reject PC$_J$ or give up the claim that everyday beliefs (such as my belief that I was born in Austin) are justified. The suggested strategy for squaring purism with PC$_J$ thus leads to skepticism.

Fantl and McGrath thus mount an impressive challenge to the purist orthodoxy. And this challenge to purism serves as a premise in the Pragmatic Encroachment Objection to the Threshold View. While having strong evidence is enough to justify high confidence, it is not enough to make it rational for one’s preferences to line up with one’s preferences conditional on the proposition in question. So, by PC$_J$, strong evidence isn’t enough to justify belief. Belief and high confidence are justified in different circumstances. So belief and high confidence aren’t the same thing.

### 2.3 A Response to Fantl and McGrath’s Argument

I am justified in believing that my car is in my garage. I distinctly recall leaving it there two hours ago, and my wife and I—the only two people with keys to the car—have been home since then. Looking out the window, I can verify that I didn’t leave the car in the driveway or on the street in front of our house and that my wife hasn’t moved it there. It is of course possible that someone has snuck into our garage and has hot-wired the car.
or stolen a key) and driven away with it. But that is extremely unlikely in this neighborhood, especially since I have not heard the garage door open and have been near enough to the garage to hear it open most of the time I’ve been home.

Although I quite reasonably believe my car is in the garage, I wouldn’t take every possible bet on it. Suppose I have an acquaintance who loves to make bets and whose favorite kind of bet is one where he is obliged to pay a trivial amount if some highly probable proposition is verified, but the other person is obliged to pay an enormous amount if the proposition turns out to be false. He takes some twisted pleasure in observing the effect it has on people to deliberate over whether to accept the lopsided bet. My acquaintance has never won such a bet, and he never cheats by checking in advance whether the proposition in question is true, or by determining the truth of the proposition himself (by fixing the circumstances). He is eccentric and mildly sadistic, but honest.

My acquaintance phones me and offers the following bet. If my car is in the garage, he will give me a nickel; if my car is not in the garage, I will give him nine tenths of my net worth. Let’s assume that he has both the means and the determination to ensure that I pay up if my car turns out not to be in the garage, and that I have the means and the determination to ensure that the bet will be canceled if he has somehow cheated (by either having my car surreptitiously moved or by finding out in advance that my car is not in the garage).

I would refuse such a bet, and that seems to be just what rationality would require, given what is at stake. But it seems that I would still be justified in believing that my car is in the garage. My belief that my car is in the garage does not, and should not, evaporate when the bet is offered. But even while continuing to believe, I acknowledge
(as I often do with things I believe) that it’s possible I’m wrong. And the stakes are so high (not just the monetary stakes, but the consequences for my marriage, my retirement, my career decisions, etc.) that the possibility of being wrong is enough to (rationally) prevent me from accepting the bet.

On the account of belief defended in Chapter 1, I believe that my car is in the garage if and only if I have enough of the relevant doxastic dispositions. It is true that one of the relevant doxastic dispositions is the disposition to use the proposition that my car is in the garage in my reasoning. But do we really think I should lose even this disposition? Perhaps the disposition should be masked in the situation where I’m being offered the lopsided bet. Or perhaps I am disposed generally to use the proposition in reasoning, though not in the odd case where I’m offered a lopsided bet. There seems little reason to say that, when offered a lopsided bet, I should altogether lose the disposition to use the proposition in reasoning, much less to lose enough of the doxastic dispositions to disqualify me as a believer.

This case thus serves as a counterexample to $PC_J$. I am justified in believing that my car is in the garage, and it is rational for me to prefer accepting the bet given that my car is in the garage. But it is not rational for me to prefer accepting the bet; I should prefer to refuse.

With this counterexample in mind, the argument pattern from which Fantl and McGrath derived $PC_J$ does not seem valid, after all. Granted, it is a good rule of thumb that when you are justified in believing a proposition, you are rational to prefer whatever you’d be rational to prefer conditional on that proposition. But it’s no more than a good rule of thumb; it fails in cases where there is little to be gained by an action if the
proposition in question is true and an enormous amount to be lost by that action if the proposition is false.

2.4 A Second Argument for Pragmatic Encroachment

Fantl and McGrath (2009) give a different, more complex argument for pragmatic encroachment on justification for belief. Some conceptual background is needed to explain the argument. First we need to understand the idea of a proposition’s being “warranted enough to justify.”

Fantl and McGrath take it that both beliefs and actions can be justified or unjustified. And they assume that beliefs and actions can be justified by facts.\footnote{Fantl and McGrath do not insist that it is facts that justify. Perhaps instead it is one’s belief in a fact that does the justifying, or perhaps it is one’s evidence for the fact. Their argument does not turn on the metaphysics of justification.} Suppose, for example, that you see that I am about to step out into the street and get hit by a bus. You are justified in yanking me back, and what justifies you in so doing is the fact that I would have been hit by a bus otherwise. But the fact that I’m about to be hit by a bus only justifies you in yanking me back if you have the right sort of access to that fact. If you have no reason at all to think I am in danger, then you’re not justified in yanking me back, even if as a matter of fact I am in danger.

What sort of access to a fact do you need to have to justify your actions or other beliefs? That’s not an easy question. But it is clear enough that some kinds of truth-relevant factors are involved. Perhaps you need sufficient evidence that I’m about to be hit by a bus for the fact that I’m about to be hit by a bus to justify you in yanking me
back. Or perhaps your belief that I’m about to be hit by a bus needs to be reliably formed. In any case, we can say that a fact—or, more generally, a proposition—can be prevented from being a reason you have by your lack of the appropriate truth-relevant factors with respect to that proposition.

Where one does have enough of the appropriate truth-relevant factors with respect to a proposition to justify a belief or action, Fantl and McGrath say that the proposition is “warranted enough” to justify the belief or action. This is a technical use of “warranted,” and no associations with non-technical or other technical uses\(^\text{182}\) of “warranted” should be imported. If a proposition is warranted enough to justify you in \(\phi\)-ing, for any \(\phi\) (whether belief, action, emotion, etc.), then either you are justified in \(\phi\)-ing, or, if you’re not justified in \(\phi\)-ing, it is not because of any weakness you have with respect to \(p\) on the truth-relevant factors that are required for a proposition to justify a belief, action, etc.

One other technical term needs defining before we examine Fantl and McGrath’s (2009) argument. You are “knowledge-level justified” with respect to a proposition \(p\) if and only if strengthening your justification for \(p\) will not change whether you know that \(p\), provided that the components of knowledge other than justification (belief, truth, being ungettiered\(^\text{183}\)) are held fixed.\(^\text{184}\) Justification comes in degrees, and knowledge may well

---

182 E.g. Plantinga’s (1993: 3) technical use of “warranted” for the property that makes the difference between mere true belief and knowledge.

183 While no precise definition for being “gettiered” is available, the basic idea is that a proposition is gettiered for you when you are related to the proposition in much the way that subjects are related to the truths that they justifiedly believe but fail to know in the sorts of cases inspired by Gettier (1963). For example, if there is an unseen sheep in the field before you and there is also a dog in the field that looks to you like a sheep, you can have the justified true belief that there is a sheep in the field, but your belief is “gettiered” and is not an item of knowledge. (This is not one of Gettier’s own cases, which are rather artificial, but a Gettier-inspired case invented by Chisholm (1966).)
require more than the minimum level of justification. You have knowledge-level justification when you either have knowledge, or, if you don’t, it is not for lack of justification.

Here are the four main premises of Fantl and McGrath’s (2009) argument for pragmatic encroachment on justification for belief:

**Equivalence Thesis** For any proposition $p$, you are justified in believing that $p$ if and only if $p$ is knowledge-level justified for you.

**JKR** For any propositions $p$ and $q$, if $p$ is knowledge-level justified for you, then $p$ is warranted enough to be a reason you have to believe $q$.

**Unity Thesis** For any $p$, $q$, and $\phi$, if $p$ is warranted enough to be a reason you have to believe that $q$, then $p$ is warranted enough to be a reason you have to $\phi$.

**Safe Reasons** For any $p$ and any $\phi$, if $p$ is warranted enough to be a reason you have to $\phi$, then $p$ is warranted enough to justify you in $\phi$-ing.

It follows from the Equivalence Thesis, JKR, the Unity Thesis, and Safe Reasons that

---

184 See Fantl and McGrath (2009: 97 and esp. fn. 1).
For any \( p \) and any \( \phi \), if you are justified in believing that \( p \), then \( p \) is warranted enough to justify you in \( \phi \)-ing.

JJ then plays the role in the new argument for pragmatic encroachment that PC\( _J \) played in the argument of Fantl and McGrath (2002). Consider the train case once again. The Inquirer is in such a high-stakes situation that he is not justified in refraining from further inquiry after the first passerby tells him the Brown Line stops at Belmont. And it is for lack of warrant that he is not justified in refraining from further inquiry. Specifically, the inquirer is not justified in refraining from further inquiry because he has too little warrant for the proposition that the Brown Line stops at Belmont. So by (the contrapositive of) JJ, the inquirer is not justified in believing that the Brown Line stops at Belmont. But, plausibly, the Eavesdropper is justified in believing the Brown Line stops at Belmont. And the only difference between the Inquirer’s situation and the Eavesdropper’s (after the first passerby gives testimony) is a pragmatic difference; there is no relevant difference in evidence. So pragmatic factors encroach upon epistemic justification for belief. But, again, pragmatic factors arguably do not encroach upon epistemic justification for confidence. So belief is not the same as high confidence, contrary to the Threshold View.

2.5 Response to the New Argument

One can respond to Fantl and McGrath’s new argument for pragmatic encroachment in much the way I responded to their earlier argument. Lopsided wager cases provide putative counterexamples to JJ. I am justified in believing my car is in the
garage, even after being offered the lopsided bet. But the proposition that my car is in the garage is *not* warranted enough to justify me in accepting the bet.

But, again, intuitions about cases are not sacrosanct, and if Fantl and McGrath’s argument for JJ is sufficiently powerful, we will need to reject the intuition about lopsided wager cases, rather than reject JJ. And I concede that each premise of the argument for JJ—the Equivalence Thesis, $J^R$, the Unity Thesis, and Safe Reasons—is *prima facie* plausible and that Fantl and McGrath provide an impressive array of subarguments for these premises. But by my lights, the Unity Thesis is a weak link in the argument, at least for the purpose of supporting the Pragmatic Encroachment Objection.

The lopsided wager cases look to be good counterexamples to the Unity Thesis. I am justified in believing that my car is in the garage, even after being offered the lopsided wager. And the proposition that my car is in the garage continues to be warranted enough to be a reason I have to believe other things—e.g. that there’s a one-ton object in the garage, that the garage isn’t empty, that I should go to the garage if I want to drive my car, etc. I don’t suddenly lose my primary reason for believing these things when the lopsided bet is offered. But the proposition that my car is in the garage is *not* warranted enough to justify my taking the bet. So the Unity Thesis is subject to the same counterexample as JJ and PC$_J$.

But Fantl and McGrath (2009: 73-75) have a subargument for the Unity Thesis, and we must consider whether that subargument is strong enough to overturn this type of putative counterexample. The subargument is that if the Unity Thesis were false, it would be reasonable for subjects to *segregate* their theoretical and practical reasons, and we should expect to find reasonable subjects engaging in such segregation. We might
hear samples of deliberation like the following: “The ice on this pond is thick enough to walk across. But we shouldn’t let that dictate our decision whether to try and cross. We should focus on how likely it is that the ice is thick enough and how bad it would be if we fell through. I’m not disputing whether it’s thick enough. It is. But that’s not what we should be focusing on.” Fantl and McGrath find such speeches bizarre—even “barmy,” they say. Reasonable subjects do not partition their practical reasoning from their theoretical reasoning in this way. Any proposition that serves as a premise in theoretical reasoning is available also as a premise in practical reasoning.

But the lopsided bet cases (and the frozen pond case, for that matter) suggest to me a segregation along different lines. In the midst of deliberating about whether to accept the lopsided bet on my car’s being in the garage, I can quite justifiedly engage in practical reasoning that takes as a premise that my car is in the garage. Suppose I am getting ready to go out and run errands. I may pick up my keys and start heading for the garage, even as I am refusing the bet.

I am not segregating my beliefs along practical/theoretical lines. I am segregating them along high stake/low stake lines. There’s no harm in walking to the garage to get my car to run errands, despite my lack of absolute certainty that it’s there. With betting 90% of my net worth, it’s a different matter.

I would agree with Fantl and McGrath that the speech they imagine sounds “barmy” (or perhaps “daft”). But why do they think we need the Unity Thesis to allow us to criticize this speech? Evidently, they think we ought to be able to say, “The ice is thick enough,” whenever we’re justified in believing the ice is thick enough. I think that’s a mistake. We have to take into account what’s at issue in the conversation. If
what’s at issue is whether we should try and cross the pond, then we shouldn’t add to the conversation, “The ice is thick enough,” unless we have warrant enough to act on that statement. We have to assume that anything we assert unqualifiedly might be acted upon by our hearers. Indeed, since assertion is a speech act, it begs the question in favor of (a special case of) the Unity Thesis to maintain that anything we have sufficient warrant to believe is something we have sufficient warrant to assert. So we do not need the Unity Thesis to explain why the speech in question is problematic.

I conclude (tentatively, as befits such enterprises) that we have do not have good reason to overturn the purist orthodoxy about epistemic justification. We can maintain that the Inquirer is justified in believing that the Brown Line stops at Belmont (at least if the Eavesdropper is), but that he needs more evidence before he can act on that proposition. Not everything we are justified in believing is “actionable” in every circumstance regardless of stakes. Things we are justified in believing are actionable in low-to-moderate stakes situations. We shouldn’t discard our beliefs when the stakes go up; we should just suppress them, and switch into a mode of practical reasoning in which we act on higher-order beliefs about the probability of the propositions in question or the strength of the evidence for the propositions in question. We shouldn’t reject the Threshold View because of worries about pragmatic encroachment.
3. Purely Statistical Justification

3.1 Statistical Evidence and Assertion

We turn now to the idea underlying the Statistical Evidence Objection: that purely statistical evidence for a proposition never justifies believing that proposition (BPSJ). We’ll start with an argument for this claim that Christensen (2004: 60) mentions only in passing. It is that we tend to be unwilling to assert (without qualification) a proposition for which we have purely statistical evidence, and this suggests that our evidence does not justify believing the proposition. A close connection between belief and assertion is widely recognized. But if we recognize such a connection and if we take beliefs based on purely statistical evidence to be justified, why would we be reluctant to assert them?

A concrete example might be helpful. Suppose I have several boxes full of AA batteries, and I have been testing them one by one all afternoon. I have tested a few thousand by now, and only one was dead—the rest had a full charge. Unfortunately, I have lost track of the one dead battery, and I now have no idea which box it’s in. My wife walks in and says she needs a battery. She opens up one of the boxes of tested batteries, grabs a battery and asks, “Is this one good?”

I wouldn’t simply say, “Yes.” What I would probably say is, “Yeah, it’s almost certainly good; there’s only one bad one in the whole lot.” The first clause is a hedged assertion. The second clause is an assertion concerning the relevant evidence and an invitation to the hearer to draw her own conclusions. When our evidence is purely statistical, we tend either to hedge or to offer evidential assertions, rather than direct, unqualified assertions.
The argument, then, is that outright assertion on the basis of purely statistical evidence would (sometimes) be appropriate if belief on the basis of purely statistical evidence were (sometimes) justified; and since outright assertion in such cases is (always) inappropriate, belief in such cases must (always) be unjustified.

I find two main reasons to doubt the soundness of this argument. First, one can argue (as Unger (1975: 253-70) and Slote (1979: 185) do) that when we assert a proposition, we represent ourselves as knowing it. But one can easily reject BPSJ while affirming that one cannot know a proposition on the basis of purely statistical evidence. So the fact that it seems inappropriate to assert on the basis of purely statistical evidence need only support the view that a belief based on purely statistical evidence isn’t knowledge, not the view that it isn’t justified.

Why think an assertion represents the speaker as knowing the proposition asserted? A simple reason is that we criticize assertions by saying, “You don’t know that!” And we feel entitled to ask an asserter, “How do you know that?” Also, the view that assertion represents the speaker as knowing provides a very promising explanation of the following variant on Moore’s “paradox”\(^{185}\): “It is raining, but I don’t know that it is raining.” There is clearly something wrong with the assertion, and a very plausible explanation of what is wrong with it is that the assertion that it is raining represents the speaker as knowing that it is raining, while the assertion that the speaker doesn’t know

\(^{185}\) I understand a paradox as a set of propositions, each of which is plausible, but which are jointly inconsistent. Moore’s “paradox” is not a paradox in this sense, or in pretty much any other sense. It is just a sentence (“It’s raining, but I don’t believe that it is.”) that would be problematic or absurd or self-defeating or in some other way inappropriate to assert. Of course, the interesting question is exactly what is wrong with asserting that sentence. We might do better, then, to speak of “Moore’s question,” where the question is “What’s wrong with asserting this: ‘It’s raining, but I don’t believe that it is.’?” Or perhaps of “Moore’s terrible, horrible, no good, very bad assertion.”
it’s raining represents the speaker as knowing that she doesn’t know it’s raining (which is only true if she doesn’t know it’s raining). So the assertion represents the speaker both as knowing and as not knowing that it is raining. We can therefore explain what’s wrong with the assertion if we take an assertion to represent the speaker as knowing the thing asserted.

But suppose for the sake of argument that assertion does not represent the speaker as knowing. A second problem with the assertion argument for the ban on purely statistical justification is that it is not clear that it is never appropriate to assert on the basis of purely statistical evidence. A biology teacher might tell a student, “You have one heart, two lungs, and two kidneys.” This seems entirely appropriate, even though (as a good biology teacher is bound to know) some people—in fact, more than one out of every thousand—have unilateral renal agenesis (i.e. they never developed a second kidney). And when the probability of error becomes negligible, it is even easier to find it appropriate to make unqualified assertions. For example, a woman who is using two methods of birth control might assert outright, “I am not pregnant,” even while recognizing the non-zero probability of a recent simultaneous failure of both birth control methods.

The assertion argument for the ban on purely statistical justification is inconclusive at best. But we’ll turn next to a more sophisticated argument due to Dana Nelkin (2000).
3.2 Nelkin’s Argument

The most developed argument against purely statistical justification is Dana Nelkin’s. Nelkin (2000) argues that the ban on purely statistical justification is part and parcel of the least costly way of resolving the Lottery Paradox. The version of the Lottery Paradox that she has in mind arises independently of the Threshold View and is thus not quite the same as the one presented in §2.2. Suppose I have information about a lottery such that it is rational for me to believe the following: (i) each of exactly one million people $s_1, \ldots, s_{1,000,000}$ holds a (distinct) ticket, (ii) the lottery is fair, and (iii) there will be exactly one winner. Given such long odds for any particular ticket winning, it seems rational for me to believe of any participant that her or his ticket will not win. But then it is rational for me to believe that $s_1$’s ticket will lose, it is rational for me to believe $s_2$’s ticket will lose,\ldots, and it is rational for me to believe $s_{1,000,000}$’s ticket will lose. But it was stipulated that it is rational for me to believe that exactly one ticket will win—that either $s_1$’s ticket will not lose or $s_2$’s ticket will not lose or $\ldots$ or $s_{1,000,000}$’s ticket will not lose. So there is an inconsistent set of propositions, each member of which is rational for me to believe. And we can stipulate that the case is one in which I recognize this set to be inconsistent. But surely such a situation is impossible, for (by Consistency) it cannot be rational for me to believe each member of a set of propositions when I recognize the set to be inconsistent.

This version of the Lottery Paradox does not take a detour through rational confidence and the Threshold View to establish the rationality of believing of each participant that her or his ticket will lose. Instead it relies directly on the intuition that a $99.9999\%$ chance of losing is enough to justify the belief that the ticket will lose.
Nelkin contends (and I agree) that the only live options for resolving the paradox are (a) to deny that it is always irrational to believe propositions that are recognized to be inconsistent or (b) to deny that knowing a ticket has a 99.9999% chance of losing is enough to justify the belief that the ticket will lose. Neither option is, on the face of it, attractive (as with any good paradox). But Nelkin thinks the cost of (b) need not be as high as it appears. There is a plausible view of rationality that entails that there can be no purely statistical justification. And it follows from this that a subject is not justified in believing a lottery ticket will lose on the grounds that it has a 99.9999% chance of losing. So the ban on purely statistical justification should be embraced because it is integral to a relatively low-cost resolution of the Lottery Paradox.

What makes (b) appear costly is the thought that if a 99.9999% chance isn’t high enough to justify a belief, then there will be very few propositions for which we have strong enough evidence to justify belief. Indeed, the Lottery Paradox arises for lotteries with any number of tickets. So there is no probability short of 100% that justifies belief. The result seems to be a radical form of skepticism.

Nelkin thinks we can pursue option (b) without paying such a high price. Her proposal is that rational belief requires that the subject be able (rationally) to suppose that there is “a causal or, more broadly, explanatory, connection between one’s belief and its object.”¹¹⁸⁶ One must be in a position (rationally) to suppose that one believes $p$ because $p$ is true.

---

On this view, it is not rational for me to believe a given lottery ticket will lose on the grounds that it has a 99.9999% chance of losing, since I cannot rationally suppose that the ticket’s losing is causally or explanatorily relevant to my believing that the ticket will lose. Yet skepticism is also avoided. I rationally believe that I had oatmeal for breakfast this morning, even though memories can sometimes be deceptive, since I can quite rationally suppose that my eating oatmeal is causally and explanatorily relevant (by way of memorial storage and retrieval processes) to my current belief that I had oatmeal this morning. Thus lottery beliefs are undermined while ordinary fallible beliefs are allowed to stand.

This is a very clever solution. It appears to find a safe route between the Scylla of skepticism and the Charybdis of paradox.

3.3 Trouble for Nelkin’s Proposal

I do not think Nelkin’s solution is ultimately successful, however. As a preliminary, I’ll present an objection due to David Christensen that I think doesn’t quite hit the mark. I’ll then develop what I take to be a more damaging objection, drawing in part on other comments of Christensen’s.

Christensen (2004: 62-64) gives (an abstract version of) the following objection. Suppose Ellie and Jen plan to meet up at a conference next month. They are both on the program at the conference, they have committed to being there, they have booked their travel and their hotels, and they have made plans to get together during the conference. Jen is thus justified in believing that she will see Ellie at the conference.
But of course Jen knows very well that she wouldn’t see Ellie at the conference if
Ellie were to die in an accident on the way to the conference. And Jen knows that there is
a non-zero probability, however small, of such a misfortunate. Jen must surely be
justified in believing that Ellie will not suffer such a misfortune; otherwise, it is hard to
see how she would be justified in believing that she will see Ellie at the conference. But
Jen’s evidence for the proposition that Ellie will not die in an accident on the way to the
conference is purely statistical. So Nelkin is committed to saying that Jen is not justified
in believing that Ellie will not die in an accident on the way to the conference. But then
we get the absurd consequence that Jen is not justified in believing that she’ll see Ellie at
the conference.

The problem generalizes. Almost any belief one holds about the future could be
made false by some accident the possibility (and non-zero probability) of which one is
aware. And similarly for beliefs about present states of affairs that are spatially distant.
Despite her protestations, Nelkin’s view does seem, after all, to lead to radical
skepticism.

I do not think this criticism is entirely fair, however. For there is a parallel
argument concerning knowledge of spatially and temporally distant states of affairs; and
since precious few philosophers would countenance knowledge on the basis of purely
statistical evidence, we are faced with a very difficult skeptical puzzle. To illustrate: I
know where my bicycle is—it is chained to the bicycle rack outside the building, where I
left it two hours ago. But I have only statistical evidence that it has not been stolen in the
past two hours. Whatever one might be tempted to say about the rationality of my belief,
it seems obvious that, given only statistical evidence, I do not know that my bicycle has
not been stolen. But if I do not know that my bicycle hasn’t been stolen, then I do not
know that it’s on the rack outside the building. So I do not, after all, know where my
bicycle is. And, again, the skeptical consequence generalizes to enormous stretches of
our everyday beliefs.

John Hawthorne has devoted a whole monograph (Hawthorne 2004) to this
skeptical puzzle, and one of the main upshots of his painstaking discussion is that there is
no fully satisfying resolution to the puzzle. Hawthorne develops a “scorecard” consisting
of epistemic claims that one would like a solution to the puzzle to uphold. But no
solution upholds them all; something intuitive must be given up.

I would grant that avoiding skepticism about ordinary propositions (e.g. my
bicycle is outside) should have high (perhaps highest) priority in our decision what to
give up. But giving up the claim that we can’t know on the basis of purely statistical
evidence is not the only alternative to skepticism. Another option that several
epistemologists have favored (the “Closure-Denying” option) is to give up the principles
underlying the inference from “I do not know my bicycle hasn’t been stolen” to “I do not
know my bicycle is outside.”\footnote{See Nozick (1981) and Dretske (1970).} And another option (the “Contextualist” option) is to say
that the standards for knowledge shift during discourse so that “I know my bicycle is
outside” expresses a truth when it is uttered but “I don’t know that my bicycle hasn’t
been stolen” also expresses a truth when it is uttered.\footnote{See DeRose (1995).} If the knowledge version of the
puzzle might be resolved in either of these ways, then the rationality version might be
resolved in analogous ways. Since Christensen does not rule out the Closure-Denying
and Contextualist options for addressing the rationality version, his objection does not yet put us in a position to conclude that Nelkin’s proposal results in skepticism.

And some will be willing to bite the skeptical bullet, as long as the skepticism can be contained. Not nearly all our beliefs are based on purely statistical evidence. Perhaps we can stomach skepticism about large swaths of our everyday beliefs, as long as we can also keep other large swaths.

But it is not so clear that the damage can be contained. Consider the following principle:

**Superior Evidence**  For any persons \(s\) and \(s'\), any proposition \(p\), and any bodies of evidence \(e\) and \(e'\), if \(s\) believes \(p\) on the basis of evidence \(e\) and \(s'\) believes \(p\) on the basis of \(e'\), and if neither \(s\) nor \(s'\) has any other evidence relevant to the belief that \(p\), and if \(e\) is stronger evidence for \(p\) than \(e'\) is, then \(s'\)'s belief that \(p\) is justified only if \(s\)'s belief that \(p\) is justified.

In other words, if you and I both believe \(p\) and your evidence (the evidence on which you base your belief) is superior to mine, then my belief is justified only if yours is, too. It is important that the evidence at issue is the evidence on which our beliefs are actually based. If you don’t base your belief on the superior evidence that you have, then your belief could well fail to be justified while mine is justified. And it is important that neither of us has other relevant evidence. If your belief is based on stronger evidence than mine, but you have other relevant evidence that you are neglecting, then your belief could fail to be justified while mine is justified. But it is plausible that if the evidence on
which your belief is actually based is stronger than the evidence on which my belief is based and neither of us has other relevant evidence, then your belief is justified if mine is.

Now suppose you come to believe that Benjamin Franklin invented bifocals when you read it in a history textbook for university students.\(^{189}\) And suppose the testimony of your history textbook is your only evidence relevant to the matter. Your belief seems justified. After all, most of our historical beliefs are based on no stronger evidence than the testimony of university history textbooks. Yet surely most of our historical beliefs are justified, even if such beliefs occasionally turn out to be false.

Now suppose that I initially have no evidence at all bearing on the question whether Benjamin Franklin invented bifocals. But suppose an angel writes declarative sentences on each of one trillion lottery tickets (a distinct sentence for each ticket). The angel then informs me that the lottery is fair, there are one trillion tickets in the lottery, and all but one of them have true sentences written on them (while the other one has a false sentence written on it). I then watch as a ticket is drawn, and I read the sentence written on it. It says, “Benjamin Franklin invented bifocals.” I now have extremely strong, but purely statistical, evidence for the proposition that Benjamin Franklin invented bifocals. Conditional on my evidence, this proposition is 99.9999999999% probable. I have much stronger evidence that Franklin invented bifocals than you have.

If Nelkin is right, then despite the strength of my evidence, I am not justified in believing that Benjamin Franklin invented bifocals. But, by Superior Evidence, since my

\(^{189}\) If precision is desired, I’ll say that I mean Franklin independently invented bifocals, not that he was the first person ever to do so. The argument could be run using either interpretation.
evidence is stronger than yours, you also are not justified in believing that Benjamin Franklin invented bifocals. But that is absurd.

If you’re not quite convinced that your belief is justified in this case, then simply alter the case to make your evidence stronger. Suppose that you have spent your career verifying that Franklin invented bifocals; you have read every relevant piece of correspondence; you have discussed matters with every researcher with relevant expertise.

Still my angel can give me stronger evidence than what you have by multiplying the number of tickets in the lottery. And it will still be a consequence of Nelkin’s view that I am not justified in believing that Franklin invented bifocals. So it will still be a consequence of Nelkin’s view, plus Superior Evidence, that you are not justified in believing Franklin invented bifocals.

To maintain her view while avoiding radical skepticism, Nelkin will have to do one of two things. She could deny that my statistical evidence is stronger than your testimonial evidence. Or she could reject Superior Evidence.

The first option seems like a non-starter. We may be more comfortable with testimony since it is a more familiar form of evidence than the “lottery evidence” in my fanciful scenario. But it would be foolish to prefer testimonial evidence over lottery evidence in cases (like the one I’ve given) where testimonial evidence can much more easily lead one astray. For any fallible piece of non-statistical evidence, there is a piece of lottery evidence that is, by any plausible measure, stronger.

Rejecting Superior Evidence is a more promising route (this is, in effect, what Nelkin chooses). But Superior Evidence is a commitment of epistemological
evidentialism—a thriving view in epistemology and not one to be cast aside lightly. If we are to follow Nelkin in rejecting purely statistical justification, we will need good reason to reject evidentialism.

But the real trouble with this route is that it’s not enough to reject Superior Evidence. Process reliabilists might reject Superior Evidence on the grounds that there could be cases in which believing on the basis of weak evidence of some special sort is a highly reliable way of obtaining true belief, at least for a particular creature in the right environment. But even if that line of resistance could be made plausible, it is of no use to the proponent of the ban on purely statistical justification. For any fallible belief-forming process, there is lottery evidence such that believing on the basis of that lottery evidence is a much more reliable process. So if lottery evidence can never justify, then, given process reliabilism, no (fallible) belief-forming process is reliable enough to justify.

Indeed, the same problem will arise on just about any epistemological view that understands epistemic justification as truth-connected. As noted above, a standard (perhaps the standard) way of distinguishing epistemic justification from other kinds of justification is in terms of the goals of possessing truth and avoiding error. But believing on the basis of purely statistical evidence will be a very good way of achieving those goals whenever the statistical evidence is very strong. Someone who wants to maintain the ban on purely statistical justification will either have to offer an alternative conception of epistemic justification, or find a way of supporting the ban even within the truth-oriented framework.

Now, Nelkin does seem to want to maintain a truth-oriented conception of epistemic justification. So her strategy is to find a way of being related to truth that is
present in a lot of our beliefs, but not in our statistically-based beliefs. Again, her proposal is that justified belief requires that the subject be able (justifiedly) to suppose that there is a causal or explanatory connection between the belief and the state of affairs that the belief is about. It must be possible (justifiedly) to suppose that one believes \( p \) because \( p \) is true.

But Christensen (2004: 61) raises a quite damaging objection to this proposal. He warms up to the problem by voicing the worry that there are all manner of cases of rational belief where the fact believed to obtain does not explain the belief, but where belief and the fact believed have a common cause or explanation. For example, it is rational for me to believe that the guacamole in my fridge (which I left in there eight hours ago) is now black on top. But I cannot rationally suppose that the fact that the guacamole is black explains my belief that it is black. What explains my belief is my memory of having put the guacamole in the fridge eight hours ago, together with knowledge about the effect of oxidation on the color of guacamole. Here an initial state of affairs (the guacamole’s being left in the fridge) explains both my belief and the fact believed. Yet the belief is surely rational.

Nelkin does address this worry implicitly. In fact, she addresses it explicitly in connection with a proposed explanatory condition on knowledge:

There are cases in which we can know things about the world, not because they cause or explain our beliefs, but because there is a common cause or explanation, for example. I know that I will stop writing soon because I have formed the intention to do so. My intention explains both why I believe that I will stop and the fact that I will stop. (Nelkin 2000: 390-91)
Nelkin allows that there can be knowledge where the explanatory connection is “<”-shaped—both the belief and the fact believed are explained by some fact other than the fact believed. And it is clear enough that when Nelkin turns her attention to rational belief, this zigzagging type of explanatory connection is still on the table.

However, as Christensen (2004: 62) goes on to argue, the possibility of a zigzagging explanatory connection threatens to undermine Nelkin’s proposal for resolving the Lottery Paradox. Granted, the fact that a given ticket will lose does not explain my belief that that ticket will lose. But in order to rule the belief irrational (on Nelkin’s view), we must also rule out the possibility of a zigzagging explanatory connection between the fact that the ticket loses and my belief that the ticket loses. Christensen points out that the proposal seems to falter here. For what explains my belief that the ticket will lose is the set-up and procedure for conducting the lottery. But if we ask why a given ticket did not win, the explanation will also appeal to the set-up and procedure for conducting the lottery. (“Why didn’t your ticket win?! It was a fair lottery with a million tickets!”) So it looks like one and the same state of affairs—the set-up and procedure for the lottery—could explain both my belief that a given ticket will lose and the fact that that ticket lost. The lottery case therefore seems to display the same sort of explanatory connection as the guacamole case.

In response to a related objection due to Gilbert Harman, Nelkin says,

[T]he antecedent probabilities in the lottery case cannot explain the outcome. In that case, the outcome is that [ticket number] 59,008, say, won and that the other tickets did not win. But antecedent probabilities do not explain these facts. (Nelkin 2000: 405)
And she would clearly be right to say that the set-up and procedure do not explain a particular ticket’s *winning*. However, it is rather plausible to suppose that the set-up and procedure explain a particular ticket’s *losing*. Again, it is the set-up and the procedure that we would cite if someone asked concerning some particular ticket why it lost. And there are many other cases in which we would explain an outcome in terms of its high (but non-maximal) probability given some set-up and procedure. Christensen (2004: 62) gives the example of a car starting on some particular occasion when the ignition key is turned. There is no guarantee that the car will start, but its construction and maintenance make it highly probable that the car will start. And we are happy to accept these as an explanation for the car’s starting on some particular occasion.

Of course, Nelkin might try to drive a wedge between lottery cases and more everyday cases like Christensen’s car-starting case. But the operation is delicate. It is not at all clear that one can give a principled (rather than *ad hoc*) way of distinguishing the explanatory connections present in lottery cases from the explanatory connections present in everyday cases where belief is unproblematically rational.

The case for BPSJ is rather shaky. It could be toppled by even a moderately strong case for the Threshold View. In Chapter 6 we’ll see what there is to be said for the Threshold View. But we turn now to the third and final epistemological objection to the Threshold View.
4. The Lottery

In response to the Lottery Objection, proponents of the Threshold View have rejected the Conjunction Rule (and Consistency). Here is Richard Foley on the matter:

In the lottery, you have enormously strong evidence for the proposition that ticket #1 will not win, the proposition that ticket #2 will not win, and so on. The conjunction of these propositions is that (ticket #1 will not win & ticket #2 will not win…& ticket #n will not win), which is logically equivalent to the proposition that it’s not the case that some ticket will win. However, you do not have strong evidence for this conjunction. On the contrary, you have strong evidence for its denial….I conclude that we ought to reject the conjunction rule, which in any event is not a plausible rule. After all, a conjunction can be no more probable than its individual conjuncts, and often it will be considerably less probable. (Foley 1993: 165-66).

One need not agree with the Threshold View to endorse Foley’s line of argument here. One need only agree about the close connection Foley finds between rational belief and strength of evidence, and between strength of evidence and probability.

A very simple proposal for connecting rationality with probability is expressed in Douven and Williamson’s (2006: 755)

**Sufficiency Thesis**  For any subject s and proposition p, it is rational for s to believe p if $P(p) > t$.  

---

190 Foley makes one small and easily remediable mistake here. The conjunctive proposition he mentions is *not* logically equivalent to the proposition that it’s not the case that some ticket will win. The remedy is to add one more conjunct: that ticket #1, ticket #2,…, and ticket #n are the only tickets.

191 To be clear, Douven and Williamson do not endorse the Sufficiency Thesis, though they regard certain interpretations of it as “attractive.” Their aim (as I’ll explain more fully below) is to undermine a large class of purely formal restrictions on the Sufficiency Thesis. Momentarily, I’ll present a reason why one might think the Sufficiency Thesis, in its simplest form, cannot be quite right.
Here $P$ is the probability function, which maps propositions to their probabilities (given the subject’s evidence), and $t$ is some threshold value, presumably closer to 1 than to 0.

The Sufficiency Thesis dovetails nicely with the naïve Threshold View. Again, the naïve (invariantist, vagueness-opposing) Threshold View gives rise to

**Lockean Thesis** For any subject $s$ and proposition $p$, it is rational for $s$ to believe $p$ if and only if it is rational for $s$ to have confidence in $p$ that exceeds $T_B$.

And the Sufficiency Thesis results from combining the Lockean Thesis with

**Proportioning Thesis** For any subject $s$ and proposition $p$, $s$’s degree of confidence that $p$ is rational if and only if it is equal to $P(p)$.

In fact, the Threshold View provides a general way of answering the question, “For what value(s) of $t$ is the Sufficiency Thesis true?” The Lockean Thesis and the Proportioning Thesis jointly entail that the Sufficiency Thesis is true for any $t \geq T_B$. That is, it is rational to believe all those propositions that are so probable that the corresponding degree of confidence exceeds the belief threshold $T_B$ (the degree of confidence such that all and only higher degrees of confidence are determinates of belief).

But the Sufficiency Thesis does not depend on the Threshold View, and the Sufficiency Thesis would be enough by itself to create trouble for the Conjunction Rule, provided that $t < 1$. Indeed, Kyburg’s (1961) original presentation of the Lottery Paradox
had nothing to do with the Threshold View; its target was the Conjunction Rule for rational acceptance. And the trouble doesn’t arise only in lottery cases.\(^{192}\) Suppose \(t\) is 0.85, and suppose \(p_1\ldots p_{20}\) are probabilistically independent propositions (the probability of \(p_i\) is the same as the probability of \(p_i\) given \(p_j\), for any \(i\) and \(j\)) such that \(P(p_1) = \ldots = P(p_{20}) = 0.9\). It is a theorem of probability theory that, for probabilistically independent propositions \(\varphi\) and \(\psi\), \(P(\varphi \& \psi) = P(\varphi) \times P(\psi)\). Thus, if \(p_1\ldots p_{20}\) are probabilistically independent and \(P(p_1) = \ldots = P(p_{20}) = 0.9\), then \(P(p_1 \& \ldots \& p_{20}) < 0.15\). And since it is a theorem of probability theory that \(P(\lnot p) = 1 - P(p)\), \(P(\lnot(p_1 \& \ldots \& p_{20})) > 0.85\). So, given that \(t = 0.85\), \(P(p_1)\ldots P(p_{20})\) fall above the threshold for belief set by the Sufficiency Thesis, and so is \(P(\lnot(p_1 \& \ldots \& p_{20}))\). By the Sufficiency Thesis, then, it is rational to believe each of \(p_1\ldots p_{20}\) and rational to disbelieve—and thus not rational to believe—\((p_1 \& \ldots \& p_{20})\), contra the Conjunction Rule. Call this the “Product Problem.”

The Preface Paradox is also worth mentioning here.\(^{193}\) Suppose I have written a long biography in which I make thousands of well-researched statements about my subject’s life. I might make the following remark in the preface: “Despite my fastidiousness in researching the life of my subject, I believe readers will inevitably find some (hopefully only just a few) false statements in the book.” This seems a reasonable thing to say, and it seems quite rational for me to believe that, somewhere or other, there is a false statement in my book. Yet if my claims are sufficiently well researched, it seems rational for me to believe each of them individually. The Conjunction Rule,

\(^{192}\) The following (putative) counterexample to the Conjunction Rule is based on an example in Weatherson (2005). Weatherson, however, prefers to reject the Threshold View (and presumably the Sufficiency Thesis), rather than the Conjunction Rule.

\(^{193}\) See Makinson (1965) for the original presentation of the Preface Paradox.
however, would then imply that it is rational for me to believe the conjunction of all the claims in my book. So it’s rational for me to believe that all the claims in my book are true, and it’s rational for me to believe that not all the claims in my book are true. But that violates Non-contradiction (the principle that, for any \( p \), it’s not rational to believe \( (p \land \neg p) \)).

We can state the Preface Paradox in terms of the Sufficiency Thesis. Suppose, for every claim \( p \) in my book, that \( t < P(p) < 1 \). Then, by the Sufficiency Thesis, it is rational for me to believe each of the claims in my book. But suppose that (rather unusually) the claims in my book are all probabilistically independent of each other and all equally probable.\(^{194}\) Then, where \( n \) is the number of claims in my book and \( p \) is some arbitrary claim in the book, the probability that all the claims in the book are true is equal to \( P(p)^n \). And suppose that there are sufficiently many claims in the book that \( P(p)^n < 1 - t \). Then the probability of the conjunction of all the claims in my book is less than \( 1 - t \), in which case the probability of the denial of that conjunction is greater than \( t \). So, by the Sufficiency Thesis, it is rational for me to believe the denial of that conjunction. But it is also rational for me to believe each claim in my book (as each has a probability greater than \( t \)). By the Conjunction Rule, then, it is rational for me to believe the conjunction of all the claims in my book. So it is rational for me to believe both the conjunction of all the claims in my book and the denial of that conjunction. Again we have a violation of Non-contradiction.

\(^{194}\) To make the case a little more realistic, we could drop the equiprobability assumption and suppose only that \( \prod_{i=1}^n P(p_i) < 1 - t \), where the \( p_i \) (\( 1 \leq i \leq n \)) are the claims in my book. To make things more realistic still, we could drop the assumption of probabilistic independence and suppose only that, where each \( p_i \) (\( 1 \leq i \leq n \)) is a claim in my book, \( P(p_i) \times P(p_2 | p_1) \times P(p_3 | p_1 & p_2) \times \ldots \times P(p_n | p_1 & \ldots & p_{n-1}) < 1 - t \).
If the Sufficiency Thesis captures the relationship between probability and rational belief, then the Conjunction Rule must be rejected, regardless of where we come down on the Threshold View. But of course one might think the mistake lies with the Sufficiency Thesis.

One might have quibbles with the Sufficiency Thesis that can be dealt with by minor amendments. Suppose a person doesn’t realize that his evidence renders a given proposition highly probable, perhaps because he lacks the very concept of probability. Does the bare fact that a proposition is highly probable given his evidence justify him in believing that proposition?

While this worry hardly amounts to a decisive objection, it could serve as a motivation to amend the Sufficiency Thesis by requiring that the subject grasp the probabilistic connection:

\[
\textbf{KST} \quad \text{For any subject } s \text{ and proposition } p, \text{ if } s \text{ realizes that } P(p) > t, \text{ then it is rational for } s \text{ to believe } p.
\]

But notice that KST is still enough to generate conflict with the Conjunction Rule. Suppose \( t = 0.85 \), and suppose I realize that \( P(p_1) = \ldots = P(p_{20}) = 0.9 \) and that \( p_1 \ldots p_{20} \) are probabilistically independent (and thus that \( P(\neg(p_1 \& \ldots \& p_{20})) > 0.85 \)). Then, by (several iterations of) KST, it is rational for me to believe each of \( p_1 \ldots p_{20} \), but not rational for me to believe \( p_1 \& \ldots \& p_{20} \), contrary to the Conjunction Rule.

The point is that not just any nit-picking objection to the Sufficiency Thesis will save the Conjunction Rule. There are many principles in the neighborhood of the simple
Sufficiency Thesis that are incompatible with the Conjunction Rule. And many epistemologists have been persuaded by such principles that we need to throw out the Conjunction Rule. \textsuperscript{195}

Many others, however, have been determined to save the Conjunction Rule. But these epistemologists have usually tried to keep something in the spirit of the Sufficiency Thesis. And it is not hard to see why. Again, epistemic justification is typically distinguished from other types of justification by characterizing it as a kind of effectiveness at achieving the goals of believing truth and avoiding error. But believing highly probable propositions is a very effective way of achieving those goals. It would thus be surprising if there weren’t some correct principle in the vicinity of the Sufficiency Thesis.

Epistemologists who want to preserve the Conjunction Rule have therefore sought ways of modifying the Sufficiency Thesis, restricting its scope in one way or another, to avoid a collision with the Conjunction Rule. For example, Ryan (1996) proposes:

\textbf{RST} For any subject \(s\) and proposition \(p\), it is rational for \(s\) to believe \(p\) if \(P(p) > t\) and there is no set of propositions \(\{q_1, q_2, \ldots, q_n\}\) such that \(P(p \& q_1 \& q_2 \& \ldots \& q_n) \leq t\) but \(P(q_i) > t\) for all \(i\) \((1 \leq i \leq n)\).\textsuperscript{196}

\textsuperscript{195} See, for instance, Kyburg (1961), Foley (1993, 2009), and Hawthorne and Bovens (1999).

\textsuperscript{196} See Pollock (1995) and Douven (2002) for two other attempts to rescue the Conjunction Rule by restricting the Sufficiency Thesis.
Unlike the Sufficiency Thesis, RST does not have the consequence that it is rational to believe that a particular lottery ticket will lose. Let \( l_1, l_2, \ldots, l_n \) be such that for every \( i (1 \leq i \leq n) \), \( l_i \) is the proposition that ticket \#i will lose. And let \( w \) be the proposition that exactly one of \( l_1, l_2, \ldots, l_n \) will not lose. Suppose there is sufficient evidence concerning the lottery procedure that \( P(w) > t \). If the number of tickets \( n \) is high enough (i.e. \( 1 - 1/n > t \)), then also \( P(l_i) > t \) for all \( i (1 \leq i \leq n) \). That is enough to make it rational, according to the Sufficiency Thesis, to believe each and every \( l_i \) and to believe \( w \). Not so for RST. Since \((w \& l_1 \& l_2 \& \ldots \& l_n)\) is a contradiction, \( P(w \& l_1 \& l_2 \& \ldots \& l_n) = 0 \). So \( P(w \& l_1 \& l_2 \& \ldots \& l_n) \leq t \). But in that case, for every \( l_j \) there is a set of propositions \((w \& l_1 \& \ldots \& l_{j-1} \& l_{j+1} \& \ldots \& l_n)\) such that \( P(l_j \& w \& l_1 \& \ldots \& l_{j-1} \& l_{j+1} \& \ldots \& l_n) \leq t \) but \( P(l_i) > t \) for all \( i (1 \leq i \leq n) \) and \( P(w) > t \). The second clause of RST’s antecedent is thus unsatisfied for lottery propositions, so RST does not imply that it is rational to believe them.

RST also avoids the Product Problem, where we have probabilistically independent propositions \( p_1 \ldots p_n \), such that \( P((p_1 \& \ldots \& p_n)) < t \). Again, the second conjunct of RST’s antecedent goes unsatisfied for each of \( p_1 \ldots p_n \). Ryan’s proposal thus saves the Conjunction Rule from this problem, as well.

RST is less satisfying as a response to the Preface Paradox, however. If each claim in my book has near-maximal probability, it seems quite rational for me to believe each one. But RST does not rule such beliefs to be rational. Nor does RST rule them irrational—it gives no verdict. The reason is that the claims in my book fail to satisfy the second conjunct of RST’s antecedent. Each claim in my book does have probability greater than \( t \), but for each claim \( p \) in my book, there is a set of propositions \( \{q_1, q_2, \ldots, \}}
such that \( P(p & q_1 & q_2 & \ldots & q_n) \leq t \) but \( P(q_i) > t \) for all \( i \) \((1 \leq i \leq n)\). Just let \( \{q_1, q_2, \ldots, q_n\} \) be the set of all the other claims in my book. RST’s antecedent goes unsatisfied, so RST simply has nothing to tell us about the preface case.

In itself this does not seem like a serious problem for RST. It only shows that RST would need to be supplemented by other principles in a full theory of rational belief. However, Douven and Williamson (1996) have developed this point into a quite devastating critique of proposals like RST. Douven and Williamson’s target includes any proposal for restricting the scope of the Sufficiency Thesis that specifies the restriction in purely formal (i.e. probabilistic or broadly logical) terms. The upshot of their critique is that such proposals all, in the final analysis, either have absurd consequences or are trivial—asserting no more than that maximal probability is sufficient for rational belief. I will not rehearse their full argument here, but one can get the flavor of it by seeing how their argument applies to RST.

Douven and Williamson’s verdict on RST is that it trivializes the Sufficiency Thesis by exempting every proposition.\(^{197}\) Let \( p \) be an arbitrary proposition. Suppose that \( P(p) < 1 \). Either \( P(p) \leq t \) or \( P(p) > t \). If the former, then the first conjunct of RST’s antecedent is unsatisfied; \( p \) is exempt. So assume \( P(p) > t \). Now let \( l_1, l_2, \ldots, l_n \) be propositions concerning a fair lottery such that for every \( i \) \((1 \leq i \leq n)\), \( l_i \) is the proposition that ticket \( #i \) will lose, where \( n \) is high enough that \( 1 - \frac{1}{n} > t \). Let \( w \) be the proposition that exactly one of \( l_1, l_2, \ldots, l_n \) will not lose, and suppose there is sufficient evidence

\(^{197}\) Douven and Williamson only claim that RST exempts every proposition whose probability is less than 1. But their argument entitles them to the stronger claim that RST exempts every proposition without exception. Some of the other proposals for restricting the Sufficiency Thesis, however, exempt only(!) propositions whose probability is less than 1.
concerning the lottery procedure that \( P(w) > t \). Since \( 1 - \frac{1}{n} > t \), we have \( P(l_i) > t \), for any \( i \) \((1 \leq i \leq n)\).\(^{198}\) It is a theorem of probability theory that \( P(\phi \lor \psi) \geq P(\psi) \). So \( P(-p \lor l_i) > t \), for any \( i \) \((1 \leq i \leq n)\). Now, given \( p \), all of \((-p \lor l_1), (-p \lor l_2), \ldots \), and \((-p \lor l_n)\) are true only if every lottery ticket is a loser. But \( w \) says there is a winner. So \( (p \land w \land (-p \lor l_1) \land (-p \lor l_2) \land \ldots \land (-p \lor l_n)) \) is a contradiction, in which case \( P(p \land w \land (-p \lor l_1) \land (-p \lor l_2) \land \ldots \land (-p \lor l_n)) = 0 \). Thus \( P(p \land w \land (-p \lor l_1) \land (-p \lor l_2) \land \ldots \land (-p \lor l_n)) \leq t \).

So there is a set of propositions \{\( w \), \(-p \lor l_1 \), \(-p \lor l_2 \), ..., \(-p \lor l_n \)\} that, together with \( p \), render the second conjunct of RST’s antecedent unsatisfied. So, once again, \( p \) is exempted from RST. And as \( p \) was an arbitrary proposition, RST exempts every proposition. RST is an utterly empty claim.

Douven and Williamson show that it is, at best, extremely difficult to maintain anything in the spirit of the Sufficiency Thesis while preserving the letter of the Conjunction Rule. But since it seems likely that something in the vicinity of the Sufficiency Thesis is correct, the obvious course to follow would be to explore the possibility of compromising the letter of the Conjunction Rule while maintaining its spirit. Taking a cue from those who have tried restricting the Sufficiency Thesis, we might understand the Conjunction Rule as defeasible:

\(^{198}\) The lottery is fair, so \( P(-l_i) = \frac{1}{n} \), for any \( i \) \((1 \leq i \leq n)\). (That is, each ticket has a \( \frac{1}{n} \) chance of not losing—i.e. of winning.) It is a theorem of probability theory that \( P(\phi) = 1 - P(\neg \phi) \). So \( P(l_i) = 1 - \frac{1}{n} \), for any \( i \) \((1 \leq i \leq n)\). And it was stipulated that \( n \) is high enough that \( 1 - \frac{1}{n} > t \). So \( P(l_i) > 1 - \frac{1}{n} > t \), for any \( i \) \((1 \leq i \leq n)\).
**DCR**  For any subject $s$ and propositions $p$ and $q$, if it is rational for $s$ to believe $p$ and it is rational for $s$ to believe $q$, then it is rational for $s$ to believe $(p \& q)$, unless defeater $D$ holds of $p$ and $q$. \(^{199}\)

“$D$” is a place-holder for a condition that defeats the rationality of believing the conjunction of propositions that are rational to believe. How might “$D$” be filled in to avoid the problems discussed above?

Here is a straightforward proposal:

**STCR**  For any subject $s$ and propositions $p$ and $q$, if it is rational for $s$ to believe $p$ and it is rational for $s$ to believe $q$, then it is rational for $s$ to believe $(p \& q)$, unless $P(p \& q) \leq t$.

STCR is simply a consequence of the Sufficiency Thesis. Another way of expressing STCR is

**STCR’**  For any subject $s$ and propositions $p$ and $q$, if $P(p \& q) > t$ and it is rational for $s$ to believe $p$ and it is rational for $s$ to believe $q$, then it is rational for $s$ to believe $(p \& q)$.

\(^{199}\) I model DCR on Douven and Williamson’s (2006: 758) statement (1).
STCR’ (and thus STCR) merely strengthens the antecedent of the Sufficiency Thesis, in which case the Sufficiency Thesis entails STCR.

STCR avoids the Lottery Paradox, the Preface Paradox, and the Product Problem. Since one obtains a contradiction by conjoining the proposition that there will be a winning ticket with all the propositions to the effect that a particular ticket will lose, that conjunction has probability 0, which is of course less than or equal to \( t \). So the defeating condition is satisfied, and the principle does not deem belief in the lottery conjunction rational. And since, in the case of the Preface Paradox, the conjunction of all the claims in the book is unlikely (less than or equal to \( t \), anyway), again, the defeating condition is satisfied. And since, in the case of the Product Problem, it is stipulated that the conjunction of the propositions has probability less than \( t \) (indeed less than \( 1 - t \), where \( t > 0.5 \)), once again STCR does not deem belief in the conjunction rational.

But STCR also avoids triviality, since its defeating condition is not ubiquitously satisfied. It is quite plausible to claim that we often come across highly probable conjunctions—conjunctions with probability greater than \( t \). Indeed, when deciding how high \( t \) might be, we ought to take into account cases where belief in a conjunction is rational, despite the conjunction having non-maximal probability. One might even explain the intuition behind the (original) Conjunction Rule as the product of a habit formed by so often finding that, when it is rational for us to believe each of two propositions, the conjunction of those two propositions almost always has probability greater than \( t \).
Though there is much to be said for STCR (and more will be said below), many epistemologists have been unwilling to weaken the Conjunction Rule in this way (or in any way, for that matter). Why the resistance?

Arguments for the Conjunction Rule are uncommon, and arguments for the Conjunction Rule as such are almost non-existent. What one finds in the literature is the occasional argument for a more general principle of which the Conjunction Rule is a special case. The more general principle is:

**Multi-Premise Closure (MPC)**

For any subject $s$ and propositions $p_1, \ldots, p_n$ and $q$, if for all $i$ ($1 \leq i \leq n$) it is rational for $s$ to believe $p_i$, and if $p_1, \ldots, p_n$ jointly entail $q$, then it is rational for $s$ to believe $q$.

The Conjunction Rule is (equivalent to) the special case where $n = 2$ and $q = (p_1 \& p_2)$.

The basic argument for MPC is that it is the very foundation of argumentative reasoning. The point of constructing arguments is to render belief in the conclusions rational. Compromising MPC would jeopardize the value even of deductive argumentation. It is hard to see what the use of argumentation is if even a deductive argument needn’t make it rational to believe the conclusion when it is rational to believe all the premises.

A variant on this argument invokes a somewhat stronger principle than MPC:

---

200 A more precise (but more cumbersome) name would be “Multi-Premise Closure for Rationality.” There is a better known thesis that goes by the name “Multi-Premise Closure”—viz. Multi-Premise Closure for Knowledge. The knowledge-closure thesis plays a leading role in, e.g., Hawthorne (2004).
**Deductive Requirement**  For any subject $s$ and propositions $p_1, \ldots, p_n$ and $q$, if for all $i$ $(1 \leq i \leq n)$ it is rational for $s$ to believe $p_i$, and if $p_1, \ldots, p_n$ jointly entail $q$, then it is **irrational** for $s$ not to believe $q$.

In short: what MPC rationally permits, Deductive Requirement rationally mandates.

Kaplan (1996: 97) is particularly fervent in promoting Deductive Requirement:

We typically argue for a claim by getting our audience to accept a set of hypotheses and then showing how these hypotheses jointly entail the claim that we are at pains to advance. But if satisfying [Deductive Requirement] is of no moment, it is hard to see why we would ever pursue such a strategy. For, then, the fact that we convince someone of the truth of each of the premises of a valid argument would seem to provide her no reason whatsoever to believe its conclusion. On the contrary, it would seem she is free to believe each of the premises and deny their implication with impunity.

But the threat to dialectical practice is overblown. We are not faced with a stark choice between Deductive Requirement and intellectual anarchy. It is possible, after all, to deny that all deductive arguments are created equal. Even among arguments all of whose

---

201 In calling Deductive Requirement “stronger” than MPC, I am assuming that whatever is rationally required is also rationally permitted, but not vice versa.

202 See also Stalnaker (1984: 92).

203 Kaplan actually adverts to something slightly stronger than Deductive Requirement: a principle he calls “Deductive Cogency,” which combines Deductive Requirement with Non-contradiction. But the argument he gives here is targeted at just one component of Deductive Cogency—viz. Deductive Requirement.
premises are rational to believe, some render their conclusions (close to) certain, while
others provide rather limited support for their conclusions.

Indeed, the difference in strength among deductive arguments is an obvious fact
of philosophical life—one that must be accommodated by an adequate theory of
rationality. A variant on the Preface case is illustrative here. Suppose I write a book in
which I make an extremely complex argument consisting of a thousand premises, none of
them idle wheels. Let us assume that the argument is (known to be) valid. And suppose
that each premise is quite believable, though few are as certain as that I exist or that
$2 + 2 = 4$. With so many places where the argument could go wrong (even if each step is
unlikely to be wrong), it would be quite rational to be hesitant to embrace the conclusion.
Though the argument may lend some support to its conclusion, it will be a far cry from
the level of support one finds in snappy syllogisms like:

1) All humans are mortal.

2) Socrates is human.

Therefore,

C) Socrates is mortal.

The credibility of the conclusion of a deductive argument obviously depends (in
some way) on the credibility of the premises and the number of premises. An argument
that renders its conclusion rational to believe must not have too many premises, relative
to the credibility of each premise.
A bit less obviously, the credibility of an argument’s conclusion depends on the degree of “coherence” of the premises. If an argument has only a few premises, each of which is moderately credible, the argument still may not lend its conclusion a high degree of support if the truth of one premise tends to tell against the truth of another. Consider this argument:

1) The (Democrat-controlled) Senate will pass the bill.

2) The (Republican-controlled) House of Representatives will pass the bill.

3) The (Democratic) president will sign the bill.

4) If the Senate and House pass the bill and the president signs the bill, then the bill will become law.

Therefore,

C) The bill will become law.

Depending on the bill at issue, it could be that each of the premises is reasonable to believe, while the conclusion is somewhat doubtful. This can happen when there is a concern about one political party (or one branch of government) stealing another’s thunder. Each of the premises might be quite likely, but the truth of one might make the truth of another somewhat less likely than it otherwise would have been. The premises have a low degree of coherence.

MPC fails to recognize any cases where the premises of an argument are each rational to believe but the conclusion is not. And MPC provides no account of how credibility, number, and coherence of premises make a difference to the credibility of an
argument’s conclusion. The Sufficiency Thesis, by contrast, has something informative to say on the matter:

**Sufficiency Closure** For any subject $s$ and propositions $p_1, \ldots, p_n$ and $q$, if $P(p_1 \& \ldots \& p_n) > t$ and if $(p_1 \& \ldots \& p_n)$ entails $q$, then it is rational for $s$ to believe $q$.\textsuperscript{204}

Sufficiency Closure allows for cases where credible premises in a deductive argument do not justify believing the conclusion. This can happen where the probability of the conjunction of the premises falls below $t$.

Probability theory offers the promise of a systematic account of how credibility, number, and interdependence of premises affect the probability of their conjunction. The idea of “conditional probability” is central to the standard account. When I say, for example, that there is a high probability that the Jets will win the game given that Mark Sanchez plays, I am making a claim about a conditional probability. I may think it quite unlikely that the Jets will win, because I think that Sanchez is unlikely to play and that the Jets cannot win without him. My assertion is the conditional one that the Jets are likely to win given that Sanchez plays.

Conditional probability provides a way of understanding the sort of “coherence” discussed above. The premises of the example argument have (for some legislative items) a low degree of coherence, in the sense that the conditional probability of one on ______

\textsuperscript{204} It is a theorem of probability theory that, if $p$ entails $q$, then $P(p) \leq P(q)$. So if $P(p_1 \& \ldots \& p_n) > t$ and if $(p_1 \& \ldots \& p_n)$ entails $q$, then $P(q) > t$. So, by the Sufficiency Thesis, if $P(p_1 \& \ldots \& p_n) > t$ and if $(p_1 \& \ldots \& p_n)$ entails $q$, then it is rational for $s$ to believe $q$. Thus the Sufficiency Thesis entails Sufficiency Closure.
another is not terribly high. In particular, the probability that the (Democrat-controlled) Senate will pass the bill, given that the (Republican-controlled) House passes the bill, is (for some legislative items) not terribly high.

The probability of \( p \) conditional on \( q \) is written “\( P(p \mid q) \)” \( P(p \mid q) \) is then related (almost, but not entirely, uncontroversially\(^{205} \)) to the conjunction of \( p \) and \( q \) by the following formula:

\[
\text{COND} \quad P(p \mid q) = \frac{P(p \& q)}{P(q)}
\]

Which can be rewritten as:

\[
\text{CONJ} \quad P(p \& q) = P(p \mid q) \times P(q)
\]

Or, since conjunctions are commutable:

\[
\text{CONJ} \quad P(p \& q) = P(q \mid p) \times P(p)
\]

So the probability of the conjunction of \( p \) and \( q \) depends on the individual probability of \( p \) (and of \( q \)) and on the probability of \( p \) given \( q \) (and of \( q \) given \( p \)). The more probable \( p \) is given \( q \), the more probable \( (p \& q) \) will be (holding \( P(q) \) fixed), and the more probable \( q \) is, the more probable \( (p \& q) \) will be (holding \( P(p \mid q) \) fixed).

\(^{205}\) See Hájek (2003).
It should be borne in mind that probabilities (whether conditional or unconditional) range from 0 to 1. Therefore, when probabilities are multiplied, the product is always less than each factor, except when one of the factors is equal to 1. And the product of probabilities is always less than or equal to the lowest factor. Thus, for example, if \( P(p) = 0.6 \), \( P(q) = 1 \), and \( P(r) = 1 \), the product of these probabilities is 0.6. If more than one of the probabilities is less than 1, then the product will be strictly less than each of the factors (e.g. if \( P(p) = 0.6 \), \( P(q) = 0.8 \), and \( P(r) = 1 \), then \( P(p) \times P(q) \times P(r) = 0.48 < 0.6 < 0.8 < 1 \)).

Sticking for the moment with the case of just two conjuncts, we know from CONJ\(\Rightarrow\) that \( P(p \& q) \) will be less than \( P(q) \), unless \( P(p \mid q) = 1 \). And we know from CONJ\(\Leftarrow\) that \( P(p \& q) \) will be less than \( P(p) \), unless \( P(q \mid p) = 1 \). The conjunction of the premises of a two-premise argument will thus be less probable than either premise, unless one premise guarantees the truth of the other (in which case one of the premises is otiose). So even a deductive argument, wherein the premises jointly entail the conclusion, can only show that its conclusion is at least as probable as the conjunction of its premises—which, for any argument with no idle premises, will be less probable than each premise individually. COND thus provides an explanation of how the conclusion of a deductive argument can be less credible than each of its premises.

The generalization of CONJ\(\Rightarrow\) is:

\[
\text{GCONJ} \quad P(p_1 \& \ldots \& p_n) = P(p_1) \times P(p_2 \mid p_1) \times P(p_3 \mid p_1 \& p_2) \times \ldots \times P(p_n \mid p_1 \& \ldots \& p_{n-1})
\]
For any economically expressed argument, no proper subset of the premises will guarantee the truth of other premises. So, where $p_1 \& \ldots \& p_n$ are the premises of an economically expressed argument, all the factors in $\text{GCOND}$ to the right of $P(p_1)$ will be less than 1. The upshot is that every additional premise further lowers the probability of the conjunction. $\text{GCONJ}$ thus gives an account of why arguments with more premises tend to confer less credibility on their conclusions than do snappy syllogisms, and why a deductive argument with a very large number of premises can fail to make it rational to believe its conclusion even when all its premises are credible.

Sufficiency Closure, together with the apparatus of the probability calculus, goes a long way toward accounting for the value of argumentation. Its proponents would say it goes just far enough, and not too far. Those who look to deductive logic for models of rationality will not be satisfied. But (lifting a phrase from Christensen (2004)), perhaps it is time to put logic in its place.

The epistemic principle invoked in the Lottery Objection—viz. the Conjunction Rule (or Consistency)—is questionable on grounds independent of the Threshold View. The case against the Conjunction Rule may not be decisive, but it is nonetheless powerful. True, it is hard to deny that something in the neighborhood of the Conjunction Rule (and MPC) must be correct. But it is also hard to deny that something in the neighborhood of the Sufficiency Thesis must be correct. And one of them has to give, since they are in conflict (as the Lottery Paradox, the Preface Paradox, and the Product Problem show). But while attempts to restrict the Sufficiency Thesis have proven unfruitful, Sufficiency Closure—a consequence of the Sufficiency Thesis—represents a
promising way of reconciling the spirit of MPC with the letter of the Sufficiency Thesis. The Lottery Objection is therefore nowhere near decisive against the Threshold View.

5. Proportionate Confidence

In discussions of epistemological objections to the Threshold View, Confidence Sufficiency—the claim that very strong evidence always justifies very high confidence—has been treated as beyond question. It is worth pausing to consider why that should be. Why is confidence immune from pragmatic encroachment? Why is purely statistical evidence good enough for justified confidence?

As noted above, Confidence Sufficiency is a special case of a general proportioning thesis to the effect that confidence is rational if it is in proportion to the subject’s evidence. Such principles go back at least to Locke, and are often regarded as fundamental epistemic truths. Rarely are attempts made to say why we should proportion confidence to evidence.

Bayesian epistemologists can be read as taking proportioning confidence to evidence to be simply a matter of conditionalizing on one’s evidence. Roughly, the idea is that when you learn $q$, you proportion your confidence in $p$ to your evidence by setting your confidence in $p$ equal to whatever your confidence in $p$ conditional on $q$ had been. (If I’m 90% sure the Jets will win given that Sanchez plays, then learn that Sanchez is playing, I conditionalize on my evidence by becoming 90% sure that the Jets will win.) Bayesians have put a good deal of thought into why we ought to conditionalize on our evidence, and various justifications have been offered (see, e.g., the diachronic Dutch Book argument in Teller (1973)).

But there is clearly more to the proportioning idea promoted by writers since Locke. Strength of evidence is not a merely subjective matter, determined by whatever conditional credences we happen to have. Our conditional credences are somehow accountable to some kind of objective (or, anyway, not-wholly-subjective) relations between evidence and target propositions. The Bayesian can try to accommodate this by imposing constraints on prior conditional credences. But in any case, there will be more to the story than just conditionalization.
Here is a suggestion as to why theorists *might* think confidence should be proportioned to evidence. We need to keep track of objective chances of events and frequencies of event types in order to make prudent decisions. Strength of evidence is (somehow) connected with the objective chances of events and frequencies of event types. We should have confidence in proportion to our evidence so as to keep track of chances and frequencies, which will in turn enable us to make prudent decisions.

A number of questions could be raised about this sort of justification for proportioning principles. But the question I will focus on here is whether tracking of chances and frequencies could be accomplished by a subject whose degrees of confidence display pragmatic encroachment or adhere to a ban on high confidence based on purely statistical evidence.

In Chapter 4 I have argued (echoing others) that the Probability Judgment View is false: degree of confidence is distinct from higher-order beliefs about probabilities (probabilistic beliefs, I call them). But if that is so, then there is room for a view on which confidence is subject to pragmatic encroachment, while probabilistic beliefs are not. And there is room for a view on which purely statistical evidence always justifies a corresponding probabilistic belief, but does not always license a corresponding degree of confidence. If confidence and probabilistic belief are distinct, then perhaps they not only can, but *should* come apart in these cases.

Return once more to the train case. The Eavesdropper is justified in being quite confident, upon hearing the passerby’s testimony, that the Brown Line stops at Belmont.

---

207 E.g. Does such a justification have anything to do with the *epistemic*? After all, it sounds purely pragmatic.
Strong evidence that the Brown Line stops at Belmont has been obtained. The Inquirer has obtained the same evidence, and he should keep track of its strength somehow. But he might do so simply by forming the belief that it’s quite probable that the Brown Line stops at Belmont (or that there’s quite strong evidence that the Brown Line stops at Belmont). Yet he shouldn’t be doubtless about it. His tendency to act on the proposition—to use it as a premise in reasoning—ought to be firmly inhibited. Perhaps his degrees of other sureness dispositions (e.g. his affective dispositions) should also be depressed. One might well think he should at most be a borderline case of high confidence, and perhaps even a clear case of doubt. But he should maintain his belief in the high probability that the Brown Line stops at Belmont. That way he won’t be paralyzed by suspension of judgment—he’ll have a basis for making decisions that approximate expected value maximization. Yet he also won’t be carried away by high confidence in an unreflective moment and led to act in ways that would be imprudent given the stakes.

One might thus allow confidence to suffer pragmatic encroachment along with belief, even while respecting what seems to be the motivation behind proportioning principles. There are worries to be raised about this proposal, however. There is once again an oversophistication problem. Isn’t it too much to ask us to maintain probabilistic beliefs about all the propositions we deal with in our decisions? And can we really engage in the kind of dissociation that is called for—depressing our levels of confidence while maintaining belief in high probability (or, perhaps in some cases, augmenting confidence while maintaining belief in low probability)?
There are at least two ways these worries might be addressed. One is to leave aside higher-order beliefs and say that rational confidence is in proportion to the evidence, but that what counts as “in proportion” depends on the stakes. I have a bathroom scale with two modes—one that measures in pounds and one that measures in kilograms. Each gives a response that is in proportion to the weight applied, though the responses are different. If I weigh something in the pounds mode, then flip the switch over to “kilograms,” it is always possible to recover the measurement in pounds by multiplying the number displayed by 2.2046. One could even imagine a bathroom scale with not just two, but hundreds of modes, each one employing a scale of measurement that is a linear transformation of the others. You could always recover the weight in pounds, provided you knew the factor to use for the transformation. The instrument itself might even be designed to display the factor for the transformation alongside the (untransformed) value in the alternative scale of measurement. As long as the instrument measures weight accurately on some scale of measurement, and as long as the factor for transformation back to a familiar scale of measurement is provided, you’ll always be able to use the instrument to keep track of the weights of objects you place on it.

Perhaps rational confidence tracks strength of evidence in a similar way. Perhaps there is a default mapping between strength of evidence and degree of confidence, which then gets transformed by a constant factor depending on the stakes of the situation. As long as the factor for the transformation is recorded somehow, it should always be possible to “recover” the original (untransformed) credence level. Thus, even if there is pragmatic encroachment on confidence, confidence can track strength of evidence, provided the stake-based transformation is recorded.
This all sounds very sophisticated; does it really alleviate oversophistication worries? It may if we don’t suppose rationality requires us to operate with anything like the precision of a scientific (or even domestic) instrument. I am hungry, and I’m looking for a restaurant where I can grab something to get me through what promises to be a long but ordinary, low-stakes afternoon. I see a restaurant, and the name—“Groovy Tuesday”—rings a bell. I once read reviews on it; I don’t remember what they said. I remember having some doubt about whether the food would be tasty. But I also remember that I was looking for a place for a first date. High stakes (or so I thought back then). The food is probably tasty. I decide to go on in for lunch.

There’s nothing terribly precise about recovering evidential strength in this way. There is a level of confidence and a rough idea of the (former) stakes, and together they give me a rough idea of the strength of the evidence. Still, perhaps it is too much to ask subjects to keep track of (even roughly) how high the stakes were when a credence was formed (or most recently adjusted).

A different kind of response to oversophistication worries is to say that proportioning principles are ideals. Cognitively ideal agents (ones who are nevertheless similar to us at least in having imperfect access to the truths in question) might unfailingly track their evidence with carefully calibrated higher-order beliefs, while letting degrees of confidence rise and fall with the stakes. It is not a condition on rational permissibility that we achieve this ideal. The ideal is demanding (as ideals are wont to be), but failing to achieve it does not make one subject to any charge as serious as irrationality.
I don’t want to push any particular proposal here; the point is merely that there is considerable room to question Confidence Sufficiency in its fully general form. If the motivations for Confidence Sufficiency (and proportioning principles more generally) are as I have suggested, there may well be ways to respect those motivations even while allowing pragmatic encroachment on confidence or banning (in at least some circumstances) near-maximal confidence that is based on purely statistical evidence.

6. Concluding Remarks

We find an odd situation in the epistemological literature on the Threshold View. Most theorists reject the Threshold View, usually on the basis of epistemological arguments (though some have supplemented these with non-epistemological objections like those dealt with in Chapter 4). But theorists seem to have no qualms about employing highly controversial epistemic principles in their objections to the Threshold View.

We can view each of these objections as presenting a philosophical puzzle. The Threshold View is one element; the epistemic principles and subsidiary premises are the other elements. The elements form an inconsistent set, so something must be rejected. The objectors take it that the Threshold View is the weak link and is to be rejected.

But pragmatic encroachment and the ban on purely statistical justification are counterintuitive, and we’ve seen that the arguments in their favor leave much to be desired. The Conjunction Rule and Consistency have intuition behind them; but they are well known to generate problems independently of the Threshold View. They run up
against the Preface Paradox, the Lottery Paradox, and the Product Problem. And while the principles from which these problems stem cannot easily be modified to accommodate the Conjunction Rule and Consistency, a reconciliation *can* be effected by modifying the Conjunction Rule and Consistency in ways that preserve their spirit and respect their primary motivations.

We are left with no good reason to reject the Threshold View. And it was noted at the outset that the Threshold View is an attractive answer to the question of how belief and confidence are related—an answer that makes sense of a number of relevant phenomena. But we still need to take a closer look at the Threshold View through the lenses provided by the accounts of belief and confidence developed in Part I. We turn now to a closing assessment of the Threshold View.
1. Introduction

The Threshold View promises a straightforward account of the following phenomena:

1) Absolute certainty is a degree of confidence that entails belief.
2) Starting from a state of non-belief, repeated increases in confidence tend to lead eventually to belief.\textsuperscript{208}
3) Starting from belief, repeated diminutions of confidence tend to lead eventually to loss of belief.\textsuperscript{209}
4) There is an increase in confidence whenever someone goes from suspended judgment to belief.
5) There is a decrease in confidence whenever someone goes from belief to suspended judgment.
6) Stimuli for belief tend also to be stimuli for high confidence, and vice versa.

\textsuperscript{208} The possible exception being a case where each successive increase in confidence is smaller than the one before, in which case there might be convergence before belief is reached. Such a series requires both that confidence be infinitely fine-grained and that differences in confidence states be comparable, either of which may be doubted.

\textsuperscript{209} Again, there could be an exception in a converging series of diminutions.
7) Belief and high confidence produce similar emotions and behaviors.

These phenomena are explained by the Threshold View as follows.

If the Threshold View is correct, then all and only the highest degrees of confidence are determinates of belief. Absolute certainty (if there is such a state) is a determinate of belief. Increasing confidence ultimately leads to levels of confidence that are determinates of belief; decreasing confidence ultimately leads to levels of confidence that are not determinates of belief. Moving from suspended judgment to belief is a move from levels of confidence that aren’t determinates of belief to levels of confidence that are (and moving from belief to suspended judgment is the reverse). Belief is produced by whatever its determinates are produced by. And whenever belief produces an emotion or a behavior, some determinate of belief does so.

All this tells in favor of the Threshold View, and critics have largely failed to appreciate the fact that their criticisms need to be strong enough to overcome the positive case for the Threshold View. They have contented themselves mainly with epistemological arguments based on controversial epistemic principles. The motivations for these principles were found wanting in Chapter 5. And, as we have seen in Chapter 4, the non-epistemological challenges that have been issued are not difficult to meet, at least for a vagueness-allowing version of the Threshold View. At this point, the balance of reasons would seem to favor the Threshold View. There is much to be said for it, and what has been said against it isn’t very persuasive.

But the accounts of belief and confidence developed in Part I of this dissertation allow us to make a more careful assessment of the Threshold View than previous writers
have been able to carry out. While no definitive conclusion will be reached, the verdict here will be against the Threshold View. But I will also argue in favor of a weaker cousin of the Threshold View—what I call the “Moderate Threshold Account”—that still has important consequences for epistemology. I’ll first recap the relevant groundwork from Part I. Then I’ll use that groundwork (a) to indicate how the Threshold View is to be conceived, (b) to show that the Threshold View is probably false, and (c) to argue that the Moderate Threshold Account is probably true. Finally, I will argue that the Moderate Threshold Account has much the same epistemological consequences as the Threshold View.

2. Recap of Relevant Groundwork

2.1 The Account of Belief

I have defended (in Chapter 1) a “lenient” account of belief that is compatible with dispositionalism, role functionalism, representationalism, and interpretationism, but not with realizer functionalism. Realizer functionalism was seen to run into problems with multiple realizability and mad belief. Belief isn’t to be identified with any neurophysiological property, but with the possession of certain dispositions (perhaps those that make one predictable on a folk psychological scheme that attributes belief) or with the possession of some property or other (or some representation) that plays a certain causal role. But “strict” versions of these views should be rejected; there is not some set of dispositions (or causal powers and liabilities) that are strictly necessary and sufficient for belief. Belief is a matter of having enough of the relevant dispositions (or
having a property or representation that plays enough of the relevant causal role). Our view of belief should be “lenient.”

The relevant dispositions (or causal relations) include cognitive, affective, desiderative, volitive, non-linguistic behavioral, self-ascriptive, assertive, and non-assertive linguistic dispositions. A paradigm believer that \( p \) would be disposed to be surprised at conclusive evidence against \( p \); to use \( p \) as a premise in practical and theoretical reasoning; publicly to assert \( p \) without hedging; internally to affirm \( p \) sincerely; to self-ascribe belief that \( p \); to draw obvious inferences from \( p \) and believe the propositions inferred; not to fear that \( p \) or hope that \( p \), but to be glad that \( p \) if \( p \) is desired and upset that \( p \) if not-\( p \) is desired; and so on. Other dispositions are relevant to more specific types of beliefs. Someone who believes that you have done great things will typically be disposed to admire you. Someone who believes that you have inexcusably harmed a loved one will typically be disposed to dislike or even hate you. Someone who believes that \( \phi-ing \) is the only means to \( X \) and desires \( X \) will typically be disposed to (try to) \( \phi \). Someone who believes that she can \( \phi \) and wants to be accountable to someone for \( \phi-ing \) will typically be disposed to promise to \( \phi \). And so on.

On the lenient account I have defended, pretty much any of these dispositions might be absent (not just masked) in a believer. But not too many can be absent. And if a subject has some, but not clearly enough, of the relevant dispositions, then he will be a borderline case of belief. The account of belief defended here allows “believes” to be vague (though no particular account of vagueness is promoted), and two dimensions of vagueness are recognized. There are borderline cases where a subject clearly has some, but doesn’t clearly have enough, of the relevant doxastic dispositions. And there are
borderline cases where the subject doesn’t clearly *have* the relevant dispositions—he is a borderline case of disposition possession.

2.2 *The Account of Confidence*

In Chapter 3 I have (for similar reasons) promoted a lenient account of comparative confidence that is incompatible with realizer functionalism but compatible with dispositionalism, role functionalism, representationalism, and interpretationism.

Since confidence and doubt are closely related (as argued in Chapter 3), the relevant sureness dispositions are much the same as the “dubitative” dispositions that are relevant to whether a person doubts a proposition. In paradigm cases of comparative confidence, someone who is more confident of a proposition \( p \) than of a proposition \( q \) is disposed to be more surprised at conclusive evidence against \( p \) than at conclusive evidence against \( q \); less inhibited in his tendency to use \( p \) as a premise in reasoning than in his tendency to use \( q \) as a premise in reasoning; disposed to use milder hedges in his public assertions or internal affirmations of \( p \) than in his assertions or affirmations of \( q \), or is disposed to use stronger reinforcers in his assertions or affirmations of \( p \) than in his assertions or affirmations of \( q \); disposed to self-ascribe a higher degree of confidence (or lower degree of doubt) in \( p \) than in \( q \); less inhibited in his disposition to be glad that \( p \) if \( p \) is desired than in his disposition to be glad that \( q \) if \( q \) is desired; disposed to be more worried that \( p \) than that \( q \) if both are feared; disposed to feel more confidence or assurance and less doubt about \( p \) than about \( q \); disposed to give a greater decision weight to \( p \) than to \( q \); and so on. And there are more specific comparisons that are relevant. Someone who is more confident that you have done great things than that I have done
great things will typically be less inhibited in their disposition to admire you than in their disposition to admire me. Someone who is more confident that you have inexcusably harmed a loved one than that I have done so will typically be less inhibited in their disposed to dislike or hate you than in their disposition to dislike or hate me. Someone who is more confident of being able to $\phi$ than of being able to $\psi$ will be more disposed to promise to $\phi$ than to $\psi$. And so on.

It is not quite right, however, to say that being more confident that $p$ than that $q$ is a matter of having higher degrees of enough sureness dispositions with respect to $p$ than with respect to $q$. For technical reasons that were explained in Chapter 3, we have to add the qualification that the subject occupies the same confidence “stratum” with respect to $p$ and $q$. We have concepts for a handful of confidence levels, each defined by a set of fuzzy intervals of sureness disposition degrees that we associate with the level in question. Each of these sets of intervals of disposition degrees is a confidence stratum. If you occupy the same stratum with respect to $p$ and $q$, then you are more confident that $p$ than that $q$ if you have higher degrees of enough sureness dispositions with respect to $p$ than with respect to $q$. If you occupy a higher stratum with respect to $p$ than with respect to $q$, then you are more confident that $p$ than that $q$.²¹⁰

Occupying a confidence stratum is a matter of possessing the right degrees of enough sureness dispositions. So there will be borderline cases of stratum occupation. Even in clear cases of occupying the same stratum, it will not always be clear whether the

²¹⁰ It’s not clear a subject could satisfy this second sufficient condition for comparative confidence without satisfying the first (i.e. having higher degrees of enough sureness dispositions). But it was argued in Chapter 2 that there could at least be borderline cases of satisfying the second condition where the first condition is not satisfied.
subject scores higher on sufficiently many of the relevant dispositions. There, too, borderline cases are possible. Like belief, then, comparative confidence admits of vagueness.

3. Levels of Confidence

TVV consists of four claims: (i) there’s a level of confidence all instances of which are clear cases of non-belief, (ii) there’s a level of confidence all instances of which are clear cases of belief, (iii) if a level of confidence has instances that are clear cases of non-belief, then all instances of lower levels are clear cases of non-belief, and (iv) if a level of confidence has instances that are clear cases of belief, then all instances of higher levels are clear cases of belief.

But how are we to understand “levels of confidence”? The account of confidence developed in Chapter 3 was an account of comparative confidence. How is comparative confidence related to “levels” of confidence?

In general, a level—or a degree (these can be used interchangeably)—is one of many positions on a scale or in a series. Levels are ordered by some relation, which is usually expressed using terms pertaining to vertical extension. One level is “higher” than another or “lower” than another. We can “ascend” or “descend” the levels. The relation in question is irreflexive, asymmetric, and transitive. No level is higher than itself. If one level is higher than another, then the latter is not higher than the former. If one level is higher than a second, and a second is higher than a third, then the first is higher than the third.
All of this applies to the idea of levels of confidence. Levels of confidence are ordered, and their relative positions in the order are compared using terms pertaining to vertical extension. One level of confidence is “higher” or “lower” than another. No level of confidence is higher than itself. If one level of confidence is higher than another, then the latter is not higher than the former. And if one level of confidence is higher than a second, and a second is higher than a third, then the first is higher than the third.

Levels are commonly associated with gradable predicates (“warm,” “tall,” “heavy,” “difficult,” etc.), and comparative forms of these predicates apply to items in different levels. If one task is at one level of difficulty and another task is a higher level of difficulty, then the latter is more difficult than the former. So also with degrees of confidence. If you have one level of confidence toward p and a higher level of confidence toward q, then you are more confident that q than that p.

Levels can be conceived in such a way that the reverse doesn’t hold (though usually it does). Imagine a role-playing game in which weapons are earned by completing tasks. When players meet and do battle, the outcome is fully determined by which weapons each side has. Any wooden weapon is beaten by any copper weapon, and any copper weapon is beaten by any iron weapon. Where players have weapons of the same material, an offensive shield beats a sword; a sword beats a war hammer; and a war hammer beats an offensive shield. The weapons can then be placed in levels according to material: wood being the lowest level, copper being the next level up, and iron being the highest level. There is a relation of combat advantage that holds between any pair of

\[211\]

Not always; for example, there is no gradable predicate with which “level of measurement” (nominal, ordinal, interval, ratio) is associated.
weapons (of different types), and any weapon at a higher level has a combat advantage over any weapon at a lower level. However, a weapon can have a combat advantage over another weapon without occupying a higher level (as in the case of, say, the copper war hammer and the copper offensive shield).

Given the account of comparative confidence defended in this dissertation, I think we must conclude that levels of confidence are exceptional in the way that levels of combat advantage are in the example just given. For suppose the contrary; suppose that, for any subject \( s \) and propositions \( p \) and \( q \), if \( s \) is more confident that \( p \) than that \( q \), then \( s \) has a higher level of confidence that \( p \) than that \( q \). Then it follows that the more confident than relation is transitive. Suppose you are more confident that \( p \) than that \( q \) and more confident that \( q \) than that \( r \). Then \textit{ex hypothesi} you have a higher level of confidence that \( p \) than that \( q \) and a higher level of confidence that \( q \) than that \( r \). But the higher-than relation between levels of confidence is transitive. So you have a higher level of confidence that \( p \) than that \( r \). And, as noted above, for levels of any kind that are associated with a graded predicate, being at a higher level entails that the comparative form of the graded predicate applies. So you are more confident that \( p \) than that \( r \). Transitivity thus holds for comparative confidence, given that being more confident that \( p \) than that \( q \) entails having a higher level of confidence that \( p \) than that \( q \).

But on the account of comparative confidence defended in this dissertation, comparative confidence is arguably intransitive. Let \( \delta_1 \ldots \delta_{150} \) be levels of surprise at conclusive evidence for the proposition doubted—\( \delta_1 \) being the least surprise, \( \delta_{150} \) being the most. Let \( \epsilon_1 \ldots \epsilon_{150} \) be intensities of feelings of doubt and confidence—\( \epsilon_1 \) being the most intense doubt, \( \epsilon_{150} \) being the most intense confidence. Let \( \zeta_1 \ldots \zeta_{150} \) be levels of
qualification of assertion—ζ₁ being the strongest hedging, ζ₁₅₀ being the strongest reinforcing. Let η₁… η₁₅₀ be decision weights—η₁ being a weight near 0, η₁₅₀ being a weight near 1. And let θ₁…θ₁₅₀ be degrees of inhibition of one’s gladness or distress (depending on whether the proposition’s truth or falsity is desired)—θ₁ being total inhibition, θ₁₅₀ being total uninhibitedness. For the sake of illustration, we’ll suppose these five are all the relevant sureness dispositions.

Now suppose your sureness disposition degrees for the propositions p₁,…,p₅ are as represented in the table below:

<table>
<thead>
<tr>
<th></th>
<th>p₁</th>
<th>δ₁₂₅</th>
<th>ε₁₂₅</th>
<th>ζ₁₂₅</th>
<th>η₁₂₅</th>
<th>θ₁₂₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>p₂</td>
<td>δ₁₂₁</td>
<td>ε₁₂₆</td>
<td>ζ₁₂₆</td>
<td>η₁₂₆</td>
<td>θ₁₂₆</td>
<td></td>
</tr>
<tr>
<td>p₃</td>
<td>δ₁₂₂</td>
<td>ε₁₂₁</td>
<td>ζ₁₂₇</td>
<td>η₁₂₇</td>
<td>θ₁₂₇</td>
<td></td>
</tr>
<tr>
<td>p₄</td>
<td>δ₁₂₃</td>
<td>ε₁₂₂</td>
<td>ζ₁₂₁</td>
<td>η₁₂₈</td>
<td>θ₁₂₈</td>
<td></td>
</tr>
<tr>
<td>p₅</td>
<td>δ₁₂₄</td>
<td>ε₁₂₃</td>
<td>ζ₁₂₂</td>
<td>η₁₂₁</td>
<td>θ₁₂₉</td>
<td></td>
</tr>
</tbody>
</table>

On the account of confidence developed here, there are two ways for you to be more confident that pᵢ than that pⱼ. First, you might you occupy a higher stratum with respect to pᵢ than with respect to pⱼ. I have argued that there are not very many sureness strata, and since the degrees represented in the table are fairly tightly clustered, we can assume
that you occupy the same stratum with respect to all of \( p_1, \ldots, p_5 \). Second, while occupying the same stratum for \( p_i \) and \( p_j \) you might be more confident that \( p_i \) than that \( p_j \) by being, for enough sureness dispositions, disposed to higher degrees with respect to \( p_i \) than with respect to \( p_j \). “Enough” is vague, but what’s clearly not required is scoring higher on \textit{all} the sureness dispositions. So for purposes of illustration, we’ll assume that four out of five is enough.

It follows that in the example represented in the table, you are more confident that \( p_2 \) than that \( p_1 \), more confident that \( p_3 \) than that \( p_2 \), more confident that \( p_4 \) than that \( p_3 \), and more confident that \( p_5 \) than that \( p_4 \). But notice that you are also more confident that \( p_1 \) than that \( p_5 \). If comparative confidence is transitive, then you are more confident that \( p_1 \) than that \( p_1 \). But that is impossible. So transitivity fails for comparative confidence.

Now, to make the argument work I have had to assume that there are a great many degrees of each sureness disposition. If there are only a few degrees of each, then we won’t get the tight clustering that ensures that we remain within a single sureness stratum. The trick here is, as we move down the table, to drop one disposition at a time by many degrees and then let it slowly climb back up—too slowly to rise to the degree at which it started at the top of the table. If there are only a few possible degrees, then dropping far enough to get the desired effect will require going all the way down to degrees that are associated with a lower stratum. But if we have degrees associated with a lower stratum for too many of the sureness dispositions, then, on the account I have defended, we have moved to a \textit{lower}, not a higher, level of confidence, which breaks the “loop.”
But I think the assumption that the sureness dispositions have finely grained degrees is a pretty safe one. Even if human beings are only capable of four or five distinct degrees of, say, surprise, it doesn’t follow—indeed it is quite doubtful—that just four or five degrees of surprise are possible. If there are only a handful of hedges or reinforcers in a given language, other languages could well be richer in that respect. It seems to me quite likely that enough (even if not all) of the sureness dispositions will be sufficiently finely grained to generate the effect seen in the example.

So we can’t take a straightforward view of the relationship between levels of confidence and comparative confidence on which you have a higher level of confidence that $p$ than that $q$ if and only if you are more confident that $p$ than that $q$. How, then, shall we think of levels of confidence?

I think the only option that maintains much of the ordinary notion of a “level” or “degree” is to identify levels of confidence with the confidence strata and perhaps also what I’ll call “interstratal spaces” (to be explained below). Again, the confidence strata are defined by associations we have with particular types of confidence states (“levels” of confidence, I called them before beginning to scrutinize that term). There’s a limited range of degrees of surprise, decision weight, etc., that we associate with, for instance, being mildly doubtful. We don’t, for example, associate being utterly shocked at conclusive evidence for a proposition with mildly doubting that proposition. We associate milder forms of surprise with mild doubt.

---

212 It is worth noting that the assessment of the Threshold View below does not depend on rejecting the straightforward account of levels of confidence. The main reason I defend a more complicated account of confidence levels is simply that I think the more complicated account is correct. Also, I want to ensure that my argument doesn’t depend on an oversimplification in my conception of confidence levels.
I’ve argued that we don’t have very many distinct sets of these associations for sureness disposition degrees. So if we identify confidence levels with confidence strata, then there will be just a few levels of confidence. Comparative confidence can obtain within levels; but that won’t make for finer-grained confidence levels within the strata, because of intrastratal transitivity failures.\footnote{It might be tempting to suppose that comparative confidence loops will be small enough that there could be additional confidence levels within strata. Suppose you occupy the mild doubt stratum with respect to all of $p_1, \ldots, p_{10}$. And suppose $p_1, \ldots, p_5$ constitutes a comparative confidence loop, as does $p_6, \ldots, p_{10}$. But suppose you are more confident of each of $p_6, \ldots, p_{10}$ than of any of $p_1, \ldots, p_5$ and \emph{not vice versa}. In other words, while $p_1, \ldots, p_5$ form a comparative confidence loop and $p_6, \ldots, p_{10}$ form a comparative confidence loop, none of $p_1, \ldots, p_5$ is in a comparative confidence loop with any of $p_6, \ldots, p_{10}$. We could then regard your relations to $p_1, \ldots, p_5$ as occupying a distinct level of confidence from your relations to $p_6, \ldots, p_{10}$, though they are all within the same stratum.}

This idea was floated in Chapter 4 in the context of addressing the Arbitrariness Objection. The objectors have thought of the confidence spectrum as very finely grained, and they have found it incredible that a miniscule change in confidence should, by crossing the threshold, make as significant a psychological change as the change from non-belief to belief should be. I noted (echoing other defenders of the Threshold View) that this argument doesn’t work against a version of the Threshold View like TVV that allows the threshold to be vague. But I also pointed out that the argument’s force depends on the assumption that levels of confidence are finely grained. If there are just a few levels of confidence, it would not be surprising to find that moving from one level of confidence to the next can make an important difference.

\footnote{The trouble is that, using the mechanism illustrated above, comparative confidence loops of almost any size can be generated. The introduction of confidence strata prevents loops that feature both extremely high and extremely low degrees of the sureness dispositions. But within a stratum, there is nothing to prevent a loop that includes just about any confidence state that falls in that stratum. There is therefore not much hope for an account of confidence levels that makes them much more finely grained than the confidence strata.}
4. What the Confidence Strata Consist In

Up to this point, I have been noncommittal on the nature and number of confidence strata. But the task of assessing the Threshold View requires some boldness. So, without committing myself to a specific number, I will try to identify most of the confidence strata and very roughly characterize the degrees of the sureness dispositions that are associated with each stratum.

Remember that a confidence stratum is, by definition, something with which we associate certain (fuzzy) ranges of degrees of sureness dispositions. I think we have a rough idea where a subject’s degrees of the sureness dispositions should be when the subject is exceedingly confident that \( p \), mildly doubtful that \( p \), marginally favoring \( p \), and in equipoise (or “torn equally”) between \( p \) and not-\( p \). And of course being exceedingly confident that not-\( p \), mildly doubtful that not-\( p \), and marginally favoring not-\( p \) will be mirror images of their counterparts.\(^{214}\)

I think our associations are roughly as follows:

1) exceedingly confident that \( p \) – The subject is disposed to be shocked at (apparently) conclusive evidence against \( p \). She tends to cite \( p \) to justify her actions. She treats \( p \) as true in her reasoning and her actions, at least when not

\(^{214}\) For which reason I won’t characterize them separately.
much is at stake, with no inhibition whatsoever. She asserts that $p$ (both internally and publicly) without hedging; indeed, she reinforces her assertions that $p$. The subject tends to have uninhibited emotions appropriate to $p$’s truth (she’s glad that $p$ if she wants $p$ to be the case, distressed that $p$ if she wants $p$ not to be the case, etc.). And she tends to feel strong conviction or assurance that $p$ is true. When trying to maximize expectation for some quantity, she uses a decision weight very close to 1.

2) mildly doubtful that $p$ – The subject is disposed to be only somewhat surprised at (apparently) conclusive evidence against $p$. She has some hesitation in citing $p$ to justify her actions. Even when not much is at stake, she is to some degree inhibited in her disposition to treat $p$ as true in her reasoning and her actions. (Even when not much is at stake, she will easily transition to reasoning on the basis of higher-order propositions that take the possibility that not-$p$ into account.) She mildly hedges her assertions that $p$ (both internally and publicly). The subject is inhibited in emotions (like gladness or distress) that are, given her desires, appropriate to $p$’s truth. She tends to feel only twinges of doubt (perhaps mixed—or alternating—with moderate feelings of conviction) that $p$ is true. And

---

215 In life-and-death matters and in matters where things of immense value to us are at stake, we tend to second-guess even propositions of which we are exceedingly confident. We tend in such situations to reason in accordance, not with the first-order propositions, but with propositions concerning their probabilities or the degree to which they are supported by the available evidence. I am exceedingly confident that my car is in the garage, and for most purposes I’ll take it for granted in my reasoning that my car is in the garage. But when offered a bet that pays a nickel if my car is in the garage and costs me 90% of my net worth if my car isn’t in the garage, I’ll proceed decision-theoretically (or quasi-decision-theoretically), rather than reason in a way that takes for granted that my car is in the garage.
when trying to maximize expectation for some quantity, she uses a decision weight significantly below 1, though still well above 0.5.

3) *marginally favoring* $p$ – The subject is disposed to be unsurprised (or only very mildly surprised) at (apparently) conclusive evidence against $p$. She is not disposed to cite $p$ to justify her actions. Even when not much is at stake, she is not disposed to treat $p$ as true in her reasoning and her actions. (She tends, even when not much is at stake, to reason and act on higher-order propositions, such as that $p$ is marginally probable.) She strongly hedges any assertions that $p$ (both internally and publicly) or simply says, “I don’t know.” The subject is not disposed to have emotions (like gladness or distress) that are, given her desires, appropriate to $p$’s truth. She tends to feel significant doubt (perhaps mixed—or alternating—with mild feelings of conviction) that $p$ is true. And when trying to maximize expectation for some quantity, she uses a decision weight just a little above 0.5.

4) *in equipoise between* $p$ and *not*- $p$ – The subject is disposed to be unsurprised at (apparently) conclusive evidence for $p$ (or against $p$). She is not disposed to cite $p$ (or not-$p$) to justify her actions. Even when not much is at stake, she is not disposed to treat $p$ as true in her reasoning and her actions. (She tends, even when not much is at stake, to reason and act on higher-order propositions, such as that $p$ is as likely as not.) She strongly hedges any assertions that $p$ (both internally and publicly) or simply says, “I don’t know.” The subject is not disposed to have
emotions (like gladness or distress) that are, given her desires, appropriate to \( p \)’s truth. She tends to feel pulled equally between \( p \) and not-\( p \), feeling doubt about each in equal intensity. And when trying to maximize expectation for some quantity, she uses a decision weight of 0.5.

We may have *some* associations with absolute certainty, though I’m not sure these associations are sufficiently distinct from those we have with exceeding confidence to posit an additional confidence stratum. We do associate a decision weight of 100% with absolute certainty. But I don’t think we have a notion of maximal degrees of surprise or of assertion reinforcement or of feelings of confidence. And the other sureness disposition degrees have already topped out when the subject is exceedingly confident. So I don’t posit an additional confidence stratum for absolute certainty.

One can see that there may well be “interstratal spaces” in-between some of the strata just described. Suppose I’m disposed to be rather surprised, but not shocked, at (apparently) conclusive evidence against \( p \); I tend to assert without qualification that \( p \); I have emotions appropriate to \( p \)’s truth; and I use a decision weight of 0.95. I seem to fall somewhere in-between being mildly doubtful and exceedingly confident that \( p \). It is plausible, I think, also to posit an interstratal space between mild doubt and marginal favoring and *perhaps* between marginal favoring and equipoise. That would give us 13 confidence levels in all—(1)-(4), the counterparts of (1)-(3), and the interstratal spaces.
5. Assessment of the Threshold View

We have examined two versions of the Threshold View in this dissertation:

TVN  There is a degree of confidence $T_B$ such that believing a proposition $p$ is a determinable that has as its determinates all and only the degrees of confidence in $p$ higher than $T_B$.

TVV  There is a degree of confidence $c_1$ such that, for any proposition $p$, every case of having $c_1$ toward $p$ is a clear case of not believing $p$; there is a degree of confidence $c_2$ such that, for any proposition $p$, every case of having $c_2$ toward $p$ is a clear case of believing $p$; for any degrees of confidence $c$ and $c^*$ and for any proposition $p$, if some case of having $c$ toward $p$ is a clear case of believing $p$ and $c$ is lower than $c^*$, then every case of having $c^*$ toward $p$ is a clear case of believing $p$; and, for any degrees of confidence $c$ and $c^*$ and for any proposition $p$, if some case of having $c^*$ toward $p$ is a clear case of not believing $p$ and $c$ is lower than $c^*$, then every case of having $c$ toward $p$ is a clear case of not believing $p$.

We should now understand TVN as the claim that there is a confidence level—a stratum or interstratal space—such that all and only higher confidence levels are determinates of belief. Any confidence state that occupies a confidence level above the threshold level is a state of belief. Any confidence state that occupies the threshold confidence level or any lower confidence level is not a state of belief.
TVV, as we should now understand it, makes four claims. (i) There is a confidence level—a stratum or interstratal space—whose occupants are all clear cases of belief. (ii) There is a confidence level whose occupants are all clear cases of non-belief. (iii) If there is a clear case of belief in any confidence level, then all higher confidence levels are occupied by only clear cases of belief. And (iv) if there is a clear case of non-belief in any confidence level, then all lower confidence levels are occupied by only clear cases of non-belief.

I have developed accounts of belief and confidence with an eye to assessing TVN and TVV. We are now in a position to see that TVN is very probably false and that while TVV is likely false, something in its vicinity is most likely true.

Consider the mild doubt stratum. Here a subject has inhibitions against using the target proposition in reasoning, responding affectively in ways appropriate to the proposition’s truth, and citing the proposition to justify actions. In some subjects these inhibitions will typically succeed in quenching the relevant emotions and forestalling the relevant forms of reasoning and justification. In other subjects, the inhibitions will typically be overcome, and the relevant emotions, ratiocinations, and justifications will tend to occur. In still other subjects, the inhibitions will be effective in some situations and ineffective in others.

If a subject occupies the mild doubt stratum with respect to \( p \), and the dubitative inhibitions are ineffective, then the subject will count as believing \( p \). The subject is disposed to be surprised at (apparently) conclusive evidence against \( p \). He tends to cite \( p \) to justify his actions. He tends to use \( p \) as a premise in reasoning. He tends to take \( p \) as true in decision, volition, and action. And he has affective dispositions that are
appropriate to the truth of $p$. Granted, he isn’t disposed to assert unqualifiedly that $p$. But his hedges are mild enough that he is at least a borderline case of possessing the disposition to assert $p$. The subject is thus a rather clear case of believing $p$.

If a subject occupies the mild doubt stratum with respect to $p$, but the dubitative inhibitions are effective, then the subject cannot comfortably be classified as believing that $p$. True, the subject is disposed to be surprised at (apparently) conclusive evidence against $p$ and is at least a borderline case of possessing the disposition to assert $p$. However, he does not possess some other important doxastic dispositions—affective, cognitive, and behavioral. There could in fact be cases of mild doubt in which the subject possesses none of the doxastic dispositions other than the disposition to surprise. So the mild doubt stratum includes cases of clear non-belief, as well as cases of clear belief.

That result is inconsistent with TVN. According to TVN, there is a level of confidence such that all and only the higher levels of confidence are determinates of belief. There are two possibilities: (a) mild doubt is above the threshold, or (b) mild doubt is the threshold or is below the threshold. If (a), then mild doubt is a determinate of belief. But then every instance of mild doubt is an instance of belief (since every instance of a determinate is an instance of its determinable). But we’ve just seen that not every instance of mild doubt is an instance of belief. If (b), then mild doubt is not a determinate of belief. But if belief is a determinable, then its instances are all instances of one of its determinates. There can thus be no instances of belief in the mild doubt stratum. But we’ve just seen that there are instances of belief in the mild doubt stratum. So TVN fails.
TVV, on the other hand, is quite compatible with the existence of both clear cases of belief and clear cases of non-belief in the mild doubt stratum. But given that the mild doubt stratum is so occupied, TVV (clause (iii)) has the consequence that every level of confidence higher than mild doubt is occupied only by clear cases of belief. And TVV (clause (iv)) has the consequence that every level of confidence lower than mild doubt is occupied only by clear cases of non-belief. Are these consequences correct?\footnote{Notice that if (iii) and (iv) are correct, then (i) and (ii) will be, too. There are levels of confidence both above and below mild doubt. So if there are only clear cases of belief in levels above mild doubt, as (iii) requires, then there will be at least one level occupied by only clear cases of belief, as (i) requires. And if there are only clear cases of non-belief in levels below mild doubt, as (iv) requires, then there will be at least one level occupied by only clear cases of non-belief, as (ii) requires.}

I won’t defend (iii) and (iv) tooth and nail. I put more stock in variants on (iii) and (iv) that I’ll present below. But I’ll defend (iii) and (iv) as far as I can.

Consider the following case:

Alfie seems in several ways to be exceedingly confident that $p$. He is disposed to be shocked at (apparently) conclusive evidence against $p$. He uses a very high decision weight when trying to maximize expectation. He feels strong conviction and feels no doubt about $p$.

But Alfie also seems in several ways like a non-believer that $p$. Apart from surprise and conviction, he has none of the affective dispositions characteristic of a believer. He’s not disposed to be glad or distressed or anxious or embarrassed about $p$, despite having relevant desires. And Alfie’s ratiocinative processes and assertive patterns are not as would be typical for someone who believes that $p$. 

\footnote{Notice that if (iii) and (iv) are correct, then (i) and (ii) will be, too. There are levels of confidence both above and below mild doubt. So if there are only clear cases of belief in levels above mild doubt, as (iii) requires, then there will be at least one level occupied by only clear cases of belief, as (i) requires. And if there are only clear cases of non-belief in levels below mild doubt, as (iv) requires, then there will be at least one level occupied by only clear cases of non-belief, as (ii) requires.}
Alfie doesn’t use first-order propositions (e.g. that polar bears will be extinct by the year 2100) in his reasoning. He is a Bayesian agent and has beliefs only about the probabilities of first-order propositions (e.g. that it’s 60% probable that polar bears will be extinct by the year 2100). Although he does use in his reasoning a proposition that assigns a very high probability to $p$, he just doesn’t use $p$ itself in his reasoning. He also won’t assert $p$, even in casual conversations about trivial matters. He’ll assert only that it is highly likely that $p$.

Two questions: (1) Is Alfie highly confident that $p$? (2) Does Alfie believe that $p$?

Given the way I have characterized exceeding confidence above, Alfie would not qualify as exceedingly confident. He would at best be a borderline case of exceeding confidence. An exceedingly confident subject asserts, not only without hedging, but with reinforcement of the first-order proposition in which confidence is invested. An exceedingly confident subject has the emotions appropriate to the truth of the target proposition. And an exceedingly confident subject uses the target proposition in reasoning, at least in low-stakes situations.

But some philosophers—some formal epistemologists, in particular—will conclude, not that Alfie isn’t exceedingly confident, but that the elements of exceeding confidence that Alfie lacks are unimportant. These philosophers think that decision weight is, if not all there is to level of confidence, considerably more important than the sureness dispositions that Alfie lacks. Such philosophers will regard Alfie as occupying a confidence level above mild doubt, despite lacking some dispositions that are typically associated with the highest levels of confidence.
If these philosophers are right, then Alfie is a counterexample to (iii) if he isn’t also a clear case of belief. And Alfie has only one or two dispositions that are important to belief. He has the disposition to surprise that is typical of believers. And he has a disposition to conviction, which some (not all) have thought an important doxastic disposition. Otherwise, however, Alfie is lacking in relevant doxastic dispositions. He thus seems to be a pretty clear case of non-belief. In any event, he is not a clear case of belief.

My response to these formally-minded philosophers is that we need to be mindful of which notion of confidence is at issue. I do recognize a technical notion of “confidence” or “credence” that plays the role that Bayesian decision theorists think of confidence playing. There is a very fruitful research program that has been built around a certain idealization: an agent who can be characterized by a single function that dictates all her betting behavior. There is a technical notion of rationality (avoidance of sure loss) that applies to the behaviors of these agents and to the “credence” functions that characterize their betting behaviors. Many interesting theorems can be proven about rational credence functions, and these functions can be used to model decisions that actual agents face—financial decisions, moral decisions, and theory choice in science. There is no disputing the theoretical value of the technical notion of “confidence” or “credence.”

But as we have seen (especially in ch. 3, §3), the everyday notion of confidence is not the technical notion. Although “confidence” does ordinarily refer to something that

---

217 And if Alfie is a clear case of non-belief, then he would also be a counterexample to (iv), since there are both clear cases of non-belief and borderline cases in the mild doubt stratum.
shapes our decisions and informs our betting behavior, that is by no means all there is to confidence in the ordinary sense. If a person is described to us as “exceedingly confident” that, say, red meat causes cancer, we expect the person to assert as much, to use the proposition that red meat causes cancer as a premise in reasoning, to be anxious or distressed upon discovering that a loved one eats lots of red meat, and so on. And we would tend not to describe someone as “exceedingly confident” that red meat causes cancer if the person lacks these dispositions. Even if we find out that the person nonetheless considers it highly probable that red meat causes cancer, we’ll shy away from applying terms that indicate very high confidence. We might say the person is confident “in a way” or “in a sense”; we might be puzzled about what term to use to describe the person; or we might get specific and describe the person’s dispositions in some detail. What we won’t do is to say simply that the person is “exceedingly confident.”

It should also be borne in mind that the ordinary notion of confidence is closely connected with the ordinary notion of doubt. And a person’s assertive, deliberative, and affective dispositions are highly relevant to the person’s degree of doubt. It would be rather surprising if these dispositions matter to level of confidence in the doubt region of the confidence spectrum, but cease to matter at the high end of the confidence spectrum. Such a notion of confidence would be chimerical.

Furthermore, the ordinary notion of confidence is closely connected with the notion of certainty.\textsuperscript{218} Certainty (absolute certainty) is understood as a maximal degree

\textsuperscript{218} Here the \textit{psychological} sense of certainty is at issue. There is also an \textit{epistemic} sense of certainty. Certainty in the epistemic sense is a very lofty epistemic status that a person can have with respect to a proposition. But what exactly makes for epistemic certainty is a matter of some debate. Is it indubitability, infallibility, maximal justification, or something else? (See Reed (2011). Psychological
of confidence. But certainty is generally taken to entail belief. Confidence would be a very strange animal indeed if doxastic dispositions matter to confidence at low levels and at the highest level, but not in-between.

I conclude, then, (albeit tentatively) that the Alfie case is not a case of exceedingly high confidence. To qualify as being exceedingly confident, Alfie needs more of the sureness dispositions that double as doxastic dispositions. But then he’ll likely qualify as believing. Anyway, he won’t be a clear case of non-belief; at worst, he’ll be a borderline case.

And for similar reasons, I don’t think we will find cases of clear non-belief in the interstratal space between mild doubt and exceeding confidence. The dispositions that matter for level of doubt will surely still matter in the space just above the mild doubt stratum. And there those dispositions will be uninhibited. Occupying that space will therefore require at least enough sureness dispositions that double as doxastic dispositions to avoid being a clear case of non-belief.

So I think we can at least say that there are no clear cases of non-belief in the confidence levels above mild doubt. And I find it rather difficult to conceive of even a borderline case of non-belief in levels above mild doubt. Such a case would require having high degrees of enough sureness dispositions to occupy a confidence level above certainty is purely a matter of one’s confidence in the proposition in question. One can in principle be psychologically certain of a dubitable, fallible proposition for which one has no justification at all. (Thanks here to Michael DePaul.)

219 Or at least not a clear case. This leaves a small loophole for a critic of (iv). If epistemicism about vagueness is adopted, it could be maintained that the Alfie case, though a borderline case of exceeding confidence, is in a fact a case of exceeding confidence. This move would be incredibly bold, however. The epistemicist about borderline cases of exceeding confidence is committed to saying that we cannot know which borderline cases are cases of exceeding confidence and which are not. What basis, then, would there be for saying that cases like the Alfie cases do provide counterexamples to (iv)?
mild doubt, while lacking enough doxastic dispositions to qualify as a borderline case of non-belief. That would be impossible if every doxastic disposition were so related to some sureness disposition that a high degree of the latter entailed the former. And I think we can at least say that very few doxastic dispositions are not so related to sureness dispositions. The disposition to self-ascribe belief appears to play no role in one’s level of confidence. Perhaps some of the inferential dispositions are irrelevant to one’s level of confidence. Constructing the kind of case at issue will require denying the subject these “pure” doxastic dispositions while ascribing high degrees of all the “pure” sureness dispositions and high degrees of (almost) all the sureness dispositions that (at the highest degrees) double as doxastic dispositions. It is a very delicate operation, and it seems to me rather doubtful that it can be performed. So I will say tentatively that there can be no borderline cases of non-belief at levels of confidence above mild doubt, and less tentatively that there can be no clear cases of non-belief at levels of confidence above mild doubt.

What, then, do we find at levels of confidence below mild doubt? We certainly find no clear cases of belief in the marginally favoring stratum. Such subjects don’t justify their actions by reference to the target proposition; they don’t assert that

\[\text{\footnotesize 220} \text{ Though that is doubtful, especially in the highest levels of confidence. If an unemployed person does not believe she will soon have more money to spend, it is not very plausible that she is exceedingly confident that she will get the full-time job she just applied for.}\]

\[\text{\footnotesize 221} \text{ Of which there seem to be just one or two: decision weight and (perhaps) the disposition to feel confident.}\]
they don’t use it in reasoning; and they don’t have the appropriate emotions. It is doubtful we’d even find a borderline case of belief in that stratum.

But what about the interstratal space between mild doubt and marginal favoring? Here we can expect to find substantially inhibited dispositions to use the target proposition in reasoning and justification and to feel as befits the proposition’s truth. We also find substantially hedged assertions and low levels of surprise at counterevidence. It would be difficult, I think, to find a clear case of belief at this level of doubt. But one might well find borderline cases of belief, where the subject has some psychological quality (intellectual audacity or recklessness, perhaps) in virtue of which the dubitative inhibitions, despite their relative strength, are frequently overcome. So I conclude, again tentatively, that borderline cases of belief are to be found below the mild doubt stratum, but that clear cases of belief are not.

Here, then, is the tentative verdict. TVV is false, because (iv) is false. There are clear cases of non-belief in the mild doubt stratum, yet not all the occupants of lower levels of confidence are clear cases of non-belief—some are borderline cases. However, something in the neighborhood of (iv) is true:

(iv’) If there is a clear case of non-belief in any confidence level, then no clear cases of belief occupy any lower confidence levels.

---

222 The only thing resembling an assertion they’ll perform is one that is so heavily hedged that it fails to play the role of an assertion.
That is, if a clear case of non-belief is found at one level of confidence, then lower levels of confidence are occupied by only clear cases of non-belief and borderline cases.

I have rather tentatively endorsed (iii), but I less tentatively endorse:

(iii′) If there is a clear case of belief in any confidence level, then no clear cases of non-belief occupy any higher confidence levels.

That is, if a clear case of belief is found at one level of confidence, then higher levels of confidence are occupied by only clear cases of belief and borderline cases. So what I endorse is not the Threshold View, but a related view that I’ll call the “Moderate Threshold Account” or “MTA”:

(i′) There is a confidence level—a stratum or interstratal space—whose occupants are all either clear cases of belief or borderline cases. (ii′) There is a confidence level whose occupants are all either clear cases of non-belief or borderline cases. (iii′) If there is a clear case of belief in any confidence level, then no clear cases of non-belief occupy any higher confidence levels. And (iv′) if there is a clear case of non-belief in any confidence level, then no clear cases of belief occupy any lower confidence levels.
6. Epistemological Consequences of the Moderate Threshold Account

It must be admitted that something of the spirit of the Threshold View has been lost. I said in the Introduction that any view recognizable as a version of the Threshold View would entail that, relative to a single conversational context, a subject’s levels of confidence fully determine the truth-values of attributions of belief to that subject. Given the accounts of belief and confidence defended here, and understanding confidence levels as we now are, that claim turns out to be false. One can go from being a (clear) case of belief that $p$ to a (clear) case of non-belief that $p$ without leaving the mild doubt stratum.

Still, the Moderate Threshold Account advocated here is recognizably related to the Threshold View. And we’ll now see that it has much the same epistemological import as the Threshold View would have.

We have seen that the Threshold View forces us to choose between rejecting Confidence Sufficiency (the claim that very strong evidence always justifies very high confidence) and rejecting Pragmatic Encroachment, the Ban on Purely Statistical Justification (BPSJ), the Conjunction Rule, and Consistency. The Moderate Threshold Account leaves a small loophole for those who do not want to choose which of these epistemological claim(s) to reject. But we’ll see that there is a high cost to this means of eluding the epistemological choice.

Think again of the point in the train case when the Inquirer has just been told by the first passerby that the Brown Line stops at Belmont, and the Eavesdropper has overheard the exchange. They should both now be quite confident that the Brown Line stops at Belmont. But the Eavesdropper should believe, and the Inquirer shouldn’t (so we are told).
The Moderate Threshold Account does not strictly imply otherwise. But squaring MTA with this case of pragmatic encroachment takes some fancy footwork. The proponent of MTA can say the following:

Belief is vague, but vagueness is merely epistemic. Someone who is a borderline case of believing \( p \) might not believe \( p \). It will be unclear to all of us whether the person believes. But they do not.

The Inquirer and the Eavesdropper in the train case should have the same level of confidence that the Brown Line stops at Belmont (since they have the same evidence), and it ought to be a rather high level of confidence. But even at high levels of confidence there can be borderline cases of belief. And the Inquirer should be a borderline case of belief. But the Inquirer should nevertheless be a non-believer, while the Eavesdropper should be a believer.

I have said above that I doubt there can even be borderline cases of belief, let alone cases of non-belief, at very high levels of confidence. But as I am officially endorsing only MTA, let’s assume there can be borderline cases even in, say, the exceeding confidence stratum.

The strategy for squaring pragmatic encroachment with MTA requires epistemicism about vagueness. That already makes exploiting the loophole a rather bold move. But what makes this strategy particularly costly is a consequence of epistemicism in this context. Notice that the advocate of this strategy is committed to saying that we’ll never know whether a particular subject in a high-stakes situation is doing his epistemic
duty. Such a subject ought to be a borderline case of belief, without actually believing; and given epistemicism, we’ll never know whether a given borderline case is or isn’t actually a case of belief. We have the very odd consequence that if I find myself in a high-stakes situation like the Inquirer’s, I cannot know that my doxastic attitude is epistemically justified. Some will think that’s just plain impossible. The very notion of epistemic justification might seem to be such that an attitude is justified only if one has access to the fact that one’s attitude is justified. And even for those of us who don’t posit such “level connections,” it can just seem bizarre to suppose we could never know we hold rational doxastic attitudes in situations like Inquirer’s.

So when we get down to the details, MTA does not sit at all comfortably with a selective endorsement of pragmatic encroachment on justified belief (and rejection of pragmatic encroachment on confidence). What about the Ban on Purely Statistical Justification?

Suppose I have spent my whole career researching the question of whether Benjamin Franklin invented bifocals and have a very powerful historical case that he did (even if not uniquely). You watched an angel conduct a lottery with a gazillion tickets, all but one of which had (only) truths written on them. The ticket drawn read, “Benjamin Franklin invented bifocals.” You have even stronger evidence than I have and should thus be even more confident than I should be that Ben Franklin invented bifocals. But by BPSJ, you shouldn’t believe on the basis of your evidence, since it is purely statistical. I am of course permitted to believe on the basis of my historical evidence.

Technically, MTA allows this, and in much the same way as before. You should be at no lower a level of confidence than I am (if anything, you should be at a higher
level), and we should both have rather high levels of confidence that Ben Franklin invented bifocals. You won’t be a clear case of believing that Ben Franklin invented bifocals. But given epistemicism, you could be a borderline case of belief and yet not believe. On the accounts of belief and confidence defended here, though, this scenario will require us both to have high degrees of enough sureness dispositions to occupy a high level of confidence, me to have enough doxastic dispositions to qualify as believing, and you to lack enough doxastic dispositions not to qualify as believing (though you’ll have nearly enough).

But, again, the cost is high. Epistemicism must be embraced, and in the context epistemicism has the consequence that you cannot know if you have satisfied your epistemic obligations. You satisfy them only by being a borderline case of belief but not an actual case of belief. If you’re a borderline case, though, then, given epistemicism, you cannot know that you’re not an actual case.

The point can be extended to the Conjunction Rule and Consistency. For a large enough lottery, you should have at least as high a level of confidence that a ticket #1 will lose as I have, in light of my historical research, that Ben Franklin invented bifocals. And the same goes for ticket #2, ticket #3, and so on. But since you know they won’t all lose, you’ll violate Consistency and the Conjunction Rule if you believe ticket #1 will lose and believe ticket #2 will lose and so on. So there’s some ticket i such that you should be exceedingly confident that ticket #i will lose, but you shouldn’t believe that ticket #i will lose.

MTA is, strictly speaking, compatible with this result. But the cost, again, is that one must endorse the bizarre generalization that you can never know in such a situation
that you have satisfied your epistemic duties—you can never know that you have a justified attitude toward $p$’s losing.

As noted in the previous chapter, there is an alternative to rejecting Pragmatic Encroachment, BPSJ, Consistency, and the Conjunction Rule. One could instead opt to reject or modify Confidence Sufficiency and the proportioning principles of which it is a special case. One might say, for instance, that a subject’s level of confidence in a proposition should depend on the kind of evidence (statistical or non-statistical) or on the stakes in the subject’s situation. One might still allow that the degrees of some sureness dispositions should be strictly proportionate to the evidence. (And decision weight would be an excellent candidate.\textsuperscript{223}) But that is compatible with denying that strong evidence always justifies the highest levels of confidence.

In any case, MTA makes it difficult not to give up some epistemological claim or other that has been used against the Threshold View. The epistemological consequences of MTA are thus quite similar to those of the Threshold View.

7. Conclusion

We have seen in this chapter that, in light of the accounts of belief and confidence developed in this dissertation, the Threshold View is probably false. Levels of confidence are best identified with confidence “strata” (sets of fuzzy intervals of degrees

\textsuperscript{223} I suspect that some theorists who reject the Threshold View in order to maintain Consistency (or the Conjunction Rule or BPSJ) and a proportioning principle really only think that decision weight should be proportioned to evidence. Since they do not realize that decision weight is not the whole of confidence, they are blind to the possibility that decision weight might be proportioned to evidence even while confidence is not.
of sureness dispositions that we associate with certain confidence levels) and interstratal spaces. The mild doubt stratum includes clear cases of belief, as well as clear cases of non-belief and borderline cases. But lower levels of confidence probably include some borderline cases of belief, which is contrary to the vagueness-allowing Threshold View TVV. And there are probably cases of belief and cases of non-belief at the same confidence level (mild doubt), which is contrary to the naïve Threshold View TVN. This result is compatible, however, with the related “Moderate Threshold Account,” which requires only that there be no clear cases of belief at levels of confidence below clear cases of non-belief, and that there be no clear cases of non-belief at levels of confidence above clear cases of belief.

Though weaker than the Threshold View, the Moderate Threshold Account also does not sit well with the epistemological claims that have driven the resistance to the Threshold View. But there are independent arguments that have already made those claims controversial. Perhaps, then, the Moderate Threshold Account can help settle those controversies.
A number of substantive philosophical claims have been advanced in this dissertation. I want to close with a word on the significance of just a few of these claims.

1) There are borderline cases of belief and borderline cases of doubt. “Believes” and “doubts” are vague predicates.

Eric Schwitzgebel has done more than anyone to show what work can be done by positing borderline belief (“in-between believing,” he calls it). The idea of borderline belief is helpful in discussions of implicit (or “aversive”) racism, where it tends to distort matters to give a “Yes” or “No” answer to the question whether subjects hold racist beliefs. Borderline belief is also of use in discussing cognitive development, since there are stages at which it would be misleading either simply to affirm or simply to deny that the subject holds beliefs. For similar reasons, borderline belief might be usefully applied to non-human animals.

I would add that the idea of borderline belief promises to be fruitful in philosophical discussions of faith. Many writers have assumed that faith requires belief (some even take it to require knowledge). Recently, however, there have been a number

\[224\] And similarly for other cognitive states, such as emotions like love, jealousy, or embarrassment.
of proposals for non-doxastic forms of faith.\textsuperscript{225} And forms of faith that involve \textit{borderline} belief would make for a promising additional avenue for future research.

2) \textit{Confidence levels are coarse-grained.}

Probability-oriented epistemologists and philosophers of science typically represent degrees of confidence by means of functions from propositions to real numbers in the interval $[0, 1]$. This means of representation invites the assumption that confidence levels are infinitely fine-grained. I have argued that they aren’t. In fact, confidence levels are quite coarse-grained; there are only a dozen or so. If confidence levels are to be numerically represented, they are better represented by integers, or by intervals of real numbers.

Some theorists already do represent confidence by means of subintervals of $[0, 1]$.\textsuperscript{226} But problems arise when popular principles for rational confidence (Bayesian conditionalization in particular) are applied to confidence represented as intervals.\textsuperscript{227} There are also widely endorsed proportioning principles that require confidence to be fine-grained. Lewis’ (1987) “Principal Principle,” for instance, says (roughly) that a subject who knows the objective chance of a proposition $p$ should have a degree of confidence $p$ that exactly matches the objective chance. Since objective chances are fine-

\textsuperscript{225} See, for instance Alston (1996), Audi (2011, esp. ch. 3), and Howard-Snyder (2013).

\textsuperscript{226} See, for example, Joyce (2005).

\textsuperscript{227} Probably the most notorious of these is the problem of “dilation.” See Struigeon (2010) for discussion.
grained, the Principal Principle requires levels of confidence also to be fine-grained.228 If my case for coarse-grained confidence levels holds up, it should have a significant impact on formal epistemology.

3) *High confidence is incompatible with clear (non-borderline) non-belief.*

This claim is important because epistemologists widely assume that a subject can possess arbitrarily high confidence (short of certainty) without belief.229 Proponents of the Conjunction Rule or Consistency (probably the majority of epistemologists) contend that in lottery cases a subject should have extremely high confidence without belief. Similarly for proponents of the Ban on Purely Statistical Justification. Debates over these epistemological theses currently stand at something of a stalemate. But if the arguments of this dissertation are persuasive, they could generate some movement by undermining the psychological presuppositions of the proponents of Consistency, the Conjunction Rule, and BPSJ. At the least, this dissertation should help open up a new front. Epistemologists engaged in these debates have (naturally enough) focused almost

---


229 Of course, as we have seen, it is technically possible to affirm that high confidence and non-belief are compatible, while denying that cases of high confidence are ever clear cases of non-belief. But we have also seen that this combination of claims is problematic. It requires the truth of epistemicism—applications of vague predicates always have a determinate truth value, but we cannot know the truth-value. But, given epistemicism, the position in question has the consequence that there are cases in which a person should be highly confident without believing but could never know that she was highly confident yet not believing. These epistemologists ask us to satisfy epistemic duties that we could never know we have satisfied. One might well think that’s impossible—that the very notion of epistemic justification is such that an attitude is justified only if one has access to the fact that one’s attitude is justified (a “level-connection” some epistemologists have called it). Or one might just think it is bizarre to suppose we could never know we hold rational doxastic attitudes in, say, a lottery situation.
exclusively on epistemological considerations; but we have seen that there is an
important role for philosophy of mind to play, as well.
BIBLIOGRAPHY


332


333


