On Having No Reason:
Dogmatism and Bayesian Confirmation[1]

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ABSTRACT: Recently in epistemology a number of authors have mounted Bayesian objections to dogmatism. These objections depend on a Bayesian principle of evidential confirmation: Evidence E confirms hypothesis H just in case $Pr(H|E)>Pr(H)$. I argue using Keynes' and Knight's distinction between *risk* and *uncertainty* that the Bayesian principle fails to accommodate the intuitive notion of *having no reason* to believe. Consider as an example an unfamiliar card game: at first, since you're unfamiliar with the game, you assign credences based on the indifference principle. Later you learn how the game works and discover that the odds dictate you assign the very same credences. Examples like this show that that if you initially have *no* reason to believe H, then intuitively E can give you reason to believe H even though $Pr(H|E) \leq Pr(H)$. I show that without the principle, the objections to dogmatism fail.

Epistemology concerns both the nature of epistemic justification but also the lack thereof. On many understandings of epistemic justification, justification requires reasons; epistemologists are therefore also interested in the notion of *having no reason* to believe that P. It is this intuitive notion that I examine in this paper.

Recently in epistemology there has been a resurgence of interest in applying formal methods to epistemological problems. To evaluate these applications we need a clear understanding of the ingredient intuitive epistemic notions, like having no reason. For instance,

Bayesian epistemology operates under the assumption that rational belief and evidential confirmation are successfully modeled using Bayesian probability theory.

Take evidential confirmation. $Pr(H)$ is the probability of hypothesis H, which must be a value between zero and one, inclusive.[2] $Pr(H|E)$ is the *conditional probability* of H given E. How do we explain what it takes for E to provide confirming evidence for H? Bayesian epistemology will offer the *principle of evidential confirmation.*

(PEC)   Evidence E confirms hypothesis H just in case $Pr(H|E) > Pr(H)$.[3]

PEC is an intuitive principle. Say you are in a state where you assign 0.25 as the prior probability of H. New evidence comes in. What it is for E to be evidence for H is for E to make H likely, and if E is *new* evidence, then E should make H *more* likely than previously. That seems to mean that $Pr(H|E)$ must increase over $P(H)$. If E leaves the probability of H unchanged, then it seems E is evidentially inert with respect to H.

PEC does not capture an important aspect of our intuitive notion of evidence that I mentioned at the outset, that of having no reason. I will argue using Knight's distinction between *risk* and *uncertainty* that if you initially have *no* reason to believe H, then intuitively E can confirm H even though $Pr(H|E) \leq Pr(H)$. Now Bayesians might remain unconcerned by this argument; they might reply as White does (2006, p. 554n7) that PEC captures *a* notion of evidence, and that they focus on this notion by stipulation. I will argue that this reply fails in two recent attempts — including White's own attempt — to exploit Bayesian confirmation theory to reveal flaws in the dogmatist solution to skepticism.

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[2] I will generally regard H as a proposition rather than an event, but nothing turns on this choice. For simplicity I will assume all believers are ideally rational, hence I will move freely between speaking of the probability of H and the credence a believer assigns to H.

[3] See, for example, Talbott (2008).

1 Reasons

When I use "reason" without qualification, I mean *prima facie* reason. On my usage you have a reason to believe that P just in case you have some cognitively accessible state that counts in favor of H. It does not have to count very strongly in favor of H; the reason may be far from strong enough to justify you in believing that H. The reason may be outweighed by other *prima facie* reasons. But even the very slightest consideration is still something. To have *no reasons* to believe that P, then, is to possess *no* considerations in favor of either P or not-P.

Another important notion that will enter the discussion later is *all things considered* reasons. Information is not always unequivocal; sometimes new information provides both *prima facie* reasons to believe P and *prima facie* reasons to disbelieve P. When your *prima facie* reasons to believe P are stronger than your *prima facie* reasons to disbelieve P, you have an all things considered reason to believe P. I return to all things considered reasons later in the paper; for now, bear in mind that "reason" unqualified means *prima facie* reason.

Wading into the internalism versus externalism debate would distract from the points I am trying to make here, so I will assume that you do not have to recognize that your reason to believe is a reason, hence your reason does not have to be something you believe. As I use "reason," an experience can provide you with a reason even if you do not recognize the fact that your experience provides you with a reason. Reasons must be cognitively accessible but they do not need to be thought of *as* reasons.

Let me now begin my argument with an example that casts some doubt on the Bayesian principle of evidential confirmation.

2   Alien Card Game

One night at the Mos Eisley Cantina you find yourself betting on an unfamiliar card game. Your new drinking friends have taught you the basic rules of this game that, to your woozy eye, resembles heads-up poker. Two players receive a number of cards, they make some plays, and one is declared the winner. Cards are dealt from a black box that shifts between players seemingly at random. For this particular hand you are peering over the shoulder of the player in the first position as she receives her cards, which you can see clearly. Let WIN = that she will win this hand. What is the probability that WIN?

Since this game is new to you, you have none of the information about how a typical hand progresses that would help you make this judgment. Though you have a basic grasp on the rules and have some idea what plays are legal, you are not familiar enough with the cards and the rules to know whether or not she has a good hand. You have no idea whether the box deals fairly. Does it reshuffle before each hand? Does the outcome of this hand depend on the outcome of previous hands? You are clueless. You have no idea whether the game favors one position relative to the dealer. And you have no idea about her skill level or her opponent's, or whether it is a game of skill at all. On the basis of the indifference principle it seems that you should conclude the probability that she will win the hand is $1/2$.[4]

For the moment let me stipulate that you have *no information* about whether she will win the hand, and hence no reason to think that she will win. The stipulation probably feels artificial because the mere fact that she is playing the game seems like it gives you reason to think

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[4] As we will see shortly, nothing hinges on assigning $1/2$ as the rational credence in your state of ignorance — or even whether rationality constrains what assignment of priors you make — although it is hard to see what grounds you could have for assigning a credence of other than $1/2$.

that she will win the hand. It is clear, for example, that she has a better chance of winning than you do, since you are not even playing. I will return to this stipulation after I analyze the case.

Back to the game. You stare at her cards, trying to figure out what is likely to happen. Now it is time to bet and you remain unsure about what to do. Fortunately Ponda Baba, one of your new drinking buddies, who is also looking over the same player's shoulder, notices your confusion and discretely passes you a report with exhaustive frequency information detailing the odds for every hand. You consult the report and discover that for the cards she has, the report says a player with those cards wins exactly half the hands. Assume you have no doubts about the report's accuracy.

Ponda's report is evidence. It seems like evidence that she will win the hand, evidence that you did not have before: new evidence. Let

WIN = that she will win this hand

REPORT =   that Ponda's report says players with her cards win exactly one-half the time.

The probability that she will win given her cards looks to be 1/2, as Ponda's report suggests. As we just noted the prior probability of her winning the hand, before you had the benefit of Ponda's report, was also 1/2. Hence it looks like:

i.   REPORT is new evidence for WIN; and yet

ii. $Pr(win|report)=Pr(win)$.

Together i) and ii) violate PEC, which says that for REPORT to be new evidence for WIN, it must be that $Pr(\text{WIN}|\text{REPORT})>Pr(\text{WIN})$. PEC is false, at least for the kind of evidence that Ponda gives you.

To see how it can be plausible that PEC is false, let us examine your reasons. Initially you have no reason to believe that she is going to win the hand. Given your ignorance about how the game works, you simply had no information about it. Finding out the frequency information for someone with her cards gives you *some* reason to believe that she will win; remember we are speaking now of *prima facie* reasons, not all things considered reasons.

There are two Bayesian ways of thinking about the Alien Card game that may incline you towards retaining PEC. Upon examination neither holds up to scrutiny in a case like this one where you initially have no reasons.

First, it is true that, as Ponda's report suggests, when she has those cards the only other option, that she loses, is equally probable. This might tempt you to think that you still have no reason to believe that she is going to win. This is a mistake. It confuses an absolute notion, having a (*prima facie*) reason, with a comparative notion, having a reason to believe P *over*, or *compared to*, Q. On the comparative notion, having no reason is modeled on having no reason to favor H over alternatives $H_1 \ldots H_n$.

When you have no reason to favor H over the alternatives you may as a consequence lack an all things considered reason to believe H. That does not change the fact that you still gain a *prima facie* reason to believe H. The comparative notion fails to capture the intuitive notion of having no reasons whatsoever. If players with her cards win half the time, you do have *some* reason to think she will win, you just have equally good reason to think she will lose. The Alien Card Game draws out the difference between the absolute notion, having a *prima facie* reason, and the comparative notion, having all things considered reason. At first you have no reasons at all; after Ponda passes you the report you are equipoised. You have gained a *prima facie* reason despite the fact your assessment of the probabilities remains unchanged.

Shifting from having no reasons whatsoever to having even a *prima facie* reason significantly changes your epistemic situation. Once you gain a *prima facie* reason, you are no longer an example of the kind of case that interests dogmatists and their critics the most, namely a case where you have no reasons to believe or disbelieve skeptical hypotheses. The shift from no reasons to *prima facie* reasons (I will suppress the "prima facie" again, for now) plays a crucial role in my diagnosis of Crispin Wright's "mandated neutrality" objection to dogmatism in section 4. Why is this shift so epistemically significant? To answer that question, let's turn to the second Bayesian way of understanding the Alien Card Game.

My conclusion about the Alien Card Game might still sound strange if you accept, as Bayesians encourage us to, that new evidence requires *adjusting* rational credences up or down. If your initial credence in H is n, new information bearing on H will have you adjust your credence up or down from n; how much you adjust depends on the strength of the evidence. If the information demands no adjustments to n, then it is evidentially inert with respect to H. In Alien Card Game, because you remain equipoised, Ponda's report must be evidentially inert.

This model makes sense only when you base your initial credence on reasons. If you initially have no information about H, and hence no reason to believe that H, then when you first gain information you do not *adjust* your credence in H; instead you *replace* your initial credence with one based on the information. It makes sense to adjust your old credences in light of new information when those old credences are based on information that you still regard as worthy of consideration. But if your initial assignment does not represent information that must be weighed and reconciled with the new information, then the initial assignment ought to be discarded as soon as you get *any* information. That is exactly what happens here: you receive some new information in the form of Ponda's report and then scrap — rather than adjust —

your old credences, and assign new ones. They just happen to be exactly the same as your old ones.

Note that my diagnosis of the Alien Card Game stands even if we focus on all things considered reasons. Because the case still calls for replacing credences rather than adjusting them, the all things considered principle of evidential confirmation,

$$(\text{PEC}_{\text{ATC}}) \quad \text{E provides an all things considered reason to believe H just in case}$$

$$P(H|E) > P(H)$$

is still false. E can provide all things considered reason to believe H even if it is rational to leave your credences unchanged, and even if it is rational to lower your credences. You start out with no reasons whatsoever to believe H. Then some information comes in and you gain *prima facie* reasons to believe H and, let us suppose, *prima facie* reasons to disbelieve H. You should *replace* your previous credence, $P(H)$, with whatever the new information recommends, $P(H|E)$. If the new *prima facie* reasons offset, then you should set your credence at 0.5; in that case you have no reason to favor H over ~H, and hence no all things considered reason to believe H. If your new *prima facie* reasons for and against favor H over not-H by 0.2, then you should set your credence to 0.6 and note that you now have all things considered reason to believe H. However the *prima facie* reasons weigh against one another, you are not *adjusting* your credences up or down from where they were previously, you are *replacing* our old ignorance-based credences with new information-based credences, and these new credences reflect all the *prima facie* reasons, both for and against, that the new information provides.

Economist John Maynard Keynes (1997) appears to be the first person to make note of the distinction between having reasons and having no reasons when estimating probabilities. Following Knight (1921), this has become known as the distinction between uncertainty and

risk.[5] Harsanyi (1976) summarizes the idea nicely: "Both risk and uncertainty refer to situations where the decision maker cannot always uniquely predict the outcomes of his action. But in the case of *risk*, he will know at least the objective probabilities associated with all possible outcomes. In contrast, in the case of uncertainty, even some or all these objective probabilities will be unknown to him (or may even be undefined altogether)" (p. 94).

The difference between replacement and adjustment is crucial. We will see throughout the rest of the paper how the difference explains why the shift from uncertainty to risk, from having no reasons to having reasons, is so epistemically significant.

Let me now return to the stipulation that you have no reason to think that the card player you are watching will win. The stipulation is artificial because, as I conceded above, it appears that you do have *some* reason to think she will win: she is playing. You are not completely in the dark about who will win because you at least know the players. This seems undeniable. However, because we are specifically interested in how the above considerations about risk and uncertainty apply to dogmatist responses to skepticism, we do not need to address this worry here. Dogmatism is concerned with exactly those cases where it is assumed you initially have no reason to believe. Dogmatism's opponents grant that assumption in raising their objections. Therefore we can turn to dogmatism without defending the stipulation.[6]

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[5] Thanks to economist Glenn Hueckel for pointing me to the relevant passage in Keynes. Keynes influence is evident in some of Weatherson's work, and Weatherson references the Keynes/Knight distinction two recent papers on formal epistemology (2005 & 2007). However Weatherson recommends a different solution on behalf of dogmatism to the Bayesian objections; see footnote 19 below.

[6] A brief thought on the stipulation: while it is true that you are not completely in the dark about who will win because you know the players, I still find the case compelling as a counterexample to PEC. Ponda's evidence gives you a new reason to think that your player will win even though the probabilities do not change; you are still replacing rather than adjusting your credences. I take this to mean that even if you initially have *some* reason to believe she will win you are still *largely* in the dark. Your initial assignment of probabilities is based on almost complete ignorance. The new information gives you

3 Dogmatism

Denying PEC has implications for recent criticisms of a certain kind of modest foundationalist response to skepticism. I focus on the version of modest foundationalism that James Pryor has dubbed "dogmatism" because critics do, although their criticisms against dogmatism presumably apply to other modest foundationalist theories.[7]

Dogmatism asserts that having an experience as of P furnishes evidence for P, provided the subject has no reason to believe any skeptical alternative to P.[8] In particular, the subject does not need to have *positive* reason to reject skeptical alternatives; it is sufficient that she merely *lack* reason for believing any skeptical alternative. This means that you do not have to rule out skeptical alternatives "in advance" for your experiences to count as evidence. For example, let

EXP = you have an experience as of hands;

HANDS = that you have hands;

~DECEIVED = that you are not a handless being deceived (by an evil demon, by

prosthetics) into thinking you have hands.

According to dogmatism, EXP provides evidence for HANDS even if you have no antecedent positive reason to think ~DECEIVED is true. In fact if EXP makes you justified in believing HANDS, then you can infer ~DECEIVED from HANDS and thereby come to be justified in believing ~DECEIVED. This last step appeals to justification closure, the fact that justification is closed

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reason to replace, rather than adjust, your initial ignorance-based credences, regardless of whether those credences go up, down, or remain the same. PEC is still false.

I speculate that replacement rather than adjustment will be called for whenever you initially face significant uncertainty, when your initial credences are based on significant ignorance. The interesting and vexed question is what counts as "significant," which I do not have the space to explore here.

[7] See Pryor (2000). Other modest foundationalists include Alston (1989), Audi (1993), Burge (2003), Chisholm (1989), Peacocke (2004) and, on some interpretations, Moore (1939). The criticisms also apply to "inference to the best explanation" solutions to skepticism, such as Vogel (1990), as Vogel himself "ruefully" notes (2008, pp. 552–53n39).

[8] This quick description simplifies in several ways that do not matter for our purposes.

under known implication.[9] The fact that you can come to be justified in believing ~DECEIVED is what gives dogmatism its antiskeptical bite.[10]

I now turn to two objections to dogmatism and show how denying PEC allows the dogmatist to diffuse the objections.

4 Mandated Neutrality

The first objection, due to Crispin Wright (2007), is straightforward.[11] Wright considers the following familiar trio of propositions:

1. You have an experience as of a red wall.

2. The wall is red.

3. Your color vision is working properly.

3) is the negation of a skeptical hypothesis. According to dogmatism, provided you have no reason to believe not-3, your 1) experience as of a red wall justifies you in believing 2) that the wall is red. But suppose you are knowingly participating in a double-blind trial of a new drug. Half the participants receive the new drug, the other half a placebo, and you have no information about which group you are in. Your doctor advises you that the drug has one temporary side effect: your color vision will be systematically inverted for a period after you take the drug. You take your pill and look over at the wall. It looks red to you.

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[9] Justification closure should not be confused with confirmation closure, the principle that if E confirms H1 and H1 entails H2, then E confirms H2. Confirmation closure faces well-known counterexamples. For discussion see Kotzen (2008).

[10] Many dispute that one can become justified in believing ~DECEIVED by inferring it from HANDS when EXP provides the only warrant for HANDS; the inference fails to "transmit warrant." See Davies (2003), McKinsey (2003), and Wright (2002). For a defense of warrant transmission see Pryor (2004). The issue in the present paper stems from that debate, as will become clear when we turn to White's objection to dogmatism.

[11] Vogel (2008, §2) offers a structurally similar objection based on his "BIV Game Show" case.

Wright's very plausible thought is that once you know that there is a 50-50 chance your color vision is not working properly, evidence 1) provides no warrant for 2).[12] Wright takes this to be exactly the position dogmatism ought to concede you are in when you have no reason to believe 3) is false.

> But balanced evidence for and against is what you have, trivially, in a
> position of *innocence*, when you have no relevant evidence either way.
> And there dogmatism precisely wants the warrant for 2) to stand. So,
> *what is the relevant difference*? Why does mandated neutrality conferred
> by balanced evidence defeat the warrant provided by 1) for 2), while
> mandated neutrality conferred by lack of all relevant evidence does no
> harm? (2007, p. 41, emphasis in original)

Wright raises a good challenge; it is the dogmatist's burden to explain why mandated neutrality from balanced evidence defeats warrant but mandated neutrality from lack of evidence does not. The answer lies in the distinction between risk and uncertainty. The Alien Card Game shows how you can gain a reason without changing your assignment of probabilities, because your ignorance is replaced by reasons to assign just that probability. In Wright's Red Wall case, as in the Alien Card Game, your initial assignment is not based on reasons; it's a guess, a sensible distribution of probabilities given your total ignorance.[13] In a position of balanced risk you have a *good reason* to think that the skeptical hypothesis is true. You just also happen to have a good

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[12] See also Schiffer's discussion of how to understand what it is to "suspect" that a defeating hypothesis is true (pp. 174–76). Wright goes on to make a puzzling stronger claim: The effect of the drug trial information "is that your evidence 1 now provides *no reason whatever* for believing 2" (p. 18). As Rivka Weinberg and Matt Kotzen both pointed out to me, this stronger claim seems clearly false. If there is (only) a 50% chance that you are hallucinating then means there's at least a 50% chance the wall is red.

[13] As I'll emphasize later, there are well-known difficulties for Bayesians with assigning prior probabilities in complete ignorance.

reason to think that the skeptical hypothesis is false. It is not implausible to think that having good reason is sufficient to undermine warrant while having no reason is not.

We can emphasize why having a good reason to believe the skeptical hypothesis defeats warrant by drawing on the *prima facie* vs. all things considered reasons distinction from above.[14] Consider a case of balanced evidence; you possess *prima facie* reason to believe H as well as *prima facie* reason to disbelieve H. When new information comes in, you have to weigh that information in light of the *prima facie* reasons you already possess; your *prima facie* reasons to believe and disbelieve H factor into your final credence calculation. That is what it means to adjust your credences in light of new information. When you begin with no evidence, there are no prior reasons, *prima facie* or all things considered, to weigh against any new information. Thus how you update your credences depends not just on what your prior credences were but also on whether those prior credences were based on *prima facie* reasons or not. For example, suppose you have a coin, and suppose you initially have no information about whether the coin is fair.[15] In the lack of evidence alternative, you simply flip the coin twenty-five times and it lands tails every time. That gives you some reason, both *prima facie* and all things considered, to think that the coin is tails biased and, as a result, you should shift your credence fairly significantly towards the coin being tails biased. Now consider a balanced evidence alternative: you have already flipped the coin two million times and it has come up heads and tails exactly one million times each. You flip the coin twenty-five more times and it lands tails every time. Those twenty-five consecutive tails flips still provide *prima facie* reason to think the coin is tails biased, but how this

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[14] Thanks to Alex Rajczi and Matt Kotzen for pressing me to explain *why* the difference between balanced evidence and lack of evidence makes the difference that dogmatism alleges it makes, and for suggesting the coin flipping case that follows in the text.

[15] This means no information of any kind, not even physical symmetry information. See Strevens (1998).

information impacts your final credence is quite different in this case. It would be silly to conclude that the coin is tails biased because you have to weigh those latest twenty-five trials against the previous two million and adjust your credences accordingly.[16]

In Wright's case, you have to weigh the information your experience gives you against any prior *prima facie* reasons you had for thinking that your color vision is not working properly. When your prior neutrality derives from balanced evidence you do have *prima facie* reason to think that your color vision is not working properly to weigh against your new experiential information. That is why neutrality from balanced evidence can defeat experience's warrant.[17] On the other hand, when you start with lack of evidence, there are no prior *prima facie* reasons to weigh with your new information. Hence you ought to do whatever the new information tells you to do. Your prior credences were not based on reasons, so they should not be included in calculating updated credences. That is why the information your experience gives you behaves differently when you previously lacked information: you are not weighing the new information your experience gives you against prior reasons.

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[16] Several people suggested to me that in Red Wall and Alien Card Game the evidence affects your probability distribution, or variance, rather than your credence. I do not see how this helps the Bayesian either here or with White's objection (below). In light of this point we may have to weaken the remarks about "evidential inertness": if E leaves the probability of H unchanged, we should not say that E is evidentially inert, because E may still affect probability distribution. However, if the argument of the paper is successful, granting that point will not help the Bayesian retain PEC.

[17] As a referee helpfully noted, the point remains if the evidence is not balanced. Suppose you are told that only one in five participants receive the color-inverting drug. You still have *prima facie* reason to believe that your color vision misleads, and plausibly that suffices to defeat your experience's warrant. Of course you have *more* reason to believe that your color vision functions normally. Hence while you have all things considered reason to believe that your color vision functions normally, the prima *facie reason* to believe that your color vision misleads may be enough to defeat experience's warrant.

5 White's Objection

The second objection is due to Roger White (2006).[18] As we noted, dogmatism asserts that you can come to be justified in believing ~DECEIVED. When your experience EXP justifies you in believing that HANDS, if you realize that HANDS entails ~DECEIVED, then you can draw the inference and thereby come to be justified in believing ~DECEIVED. White thinks it is obvious that "if I gain justification for a hypothesis, then my confidence in its truth should increase" (531) or, at the very least, "it is not the case that one's degree [of] belief…should decrease" (554n10). Thus if dogmatism is correct then your confidence in ~DECEIVED should increase, or at least not decrease:

$$\Pr(\sim\text{deceived}|\text{exp}) \geq \Pr(\sim\text{deceived}).$$

Call this White's justification lemma. But, he argues, this is not what happens. When you have an experience as of a hand your confidence that you are not deceived by an evil demon should *decrease*, rather than increase.

White's Argument

1. $\Pr(\sim\text{DECEIVED}|\text{EXP}) \geq \Pr(\sim\text{DECEIVED})$ White's justification lemma

2. $\Pr(\text{EXP}|\text{DECEIVED}) > \Pr(\text{EXP})$ assumption

3. $\dfrac{\Pr(\text{DECEIVED}|\text{EXP})\Pr(\text{EXP})}{\Pr(\text{DECEIVED})} > \Pr(\text{EXP})$ 2, Bayes' Theorem

4. $\Pr(\text{DECEIVED}|\text{EXP}) > \Pr(\text{DECEIVED})$ 3

5. $\Pr(\sim\text{DECEIVED}|\text{EXP}) < \Pr(\sim\text{DECEIVED})$ 3, axiom of probability theory

6. $\Pr(\sim\text{DECEIVED}|\text{EXP}) \geq \Pr(\sim\text{DECEIVED})$ and $\Pr(\sim\text{DECEIVED}|\text{EXP}) < \Pr(\sim\text{DECEIVED})$
        1, 5: contradiction.

Premise 2) is plausible given the circumstances of the case. The probability of having an experience as of a hand given either that you have a hand ($\Pr(\text{EXP}|\text{HANDS})$) or that you are

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[18] A similar objection appears in Vogel (2008, §3).

being deceived into thinking you have a hand ($\Pr(\text{EXP}|\text{DECEIVED})$) is almost 1. Unless the prior probability of having an experience were also almost 1 — quite implausible here; in general experiences as of hands are not that common — the conditional probability will be greater than prior probability. That is what premise 2) asserts. Step 5) uses the axiom $P(A|B)+P(\sim A|B)=1$.[19]

This seems quite odd. White's conclusion seems counter to the spirit of dogmatism. How can dogmatism claim antiskeptical bite if your experience as of a hand confirms that you are handless and deceived?

Nonetheless I accept White's conclusion about what happens to your credences. After you have the experience, your credence in DECEIVED will increase and your credence in ~DECEIVED will decrease. But it does not follow that you gain justification for believing DECEIVED, nor does it follow that you do not gain reasons or justification for believing ~DECEIVED.

The problem with White's argument lies with his justification lemma, that "if I gain justification for a hypothesis, then my confidence in its truth should increase." Although the assumption seems plausible, it is a version of PEC and it is false. You can gain justification for believing ~DECEIVED even though your confidence in ~DECEIVED decreases, that is, even though $\Pr(\sim\text{DECEIVED}|\text{EXP})<\Pr(\sim\text{DECEIVED})$.

To demonstrate this, let us start by considering reasons. If you initially have *no* reason to believe you are not being deceived, EXP can result in you having a reason to believe that you are not being deceived even if the probability you assign to ~DECEIVED remains unchanged or even

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[19] Pryor (unpublished) and Weatherson (2007) both attempt to defend dogmatism from White's argument by developing unorthodox theories of probability. In unpublished work Pryor proposes a superadditive probability theory, which, if I understand it, retains PEC but allows him to block White's argument. Weatherson's "dynamic Keynesian model" models credences as intervals rather than single values. While these solutions are intriguing, I think the one I offer here is intuitive, independently supported by the arguments I offer above, and a less significant departure from orthodox Bayesianism.

decreases. You are going from a state of uncertainty to a state of risk. Your uncertainty is replaced by reasons to assign a particular probability assignment.

To see how it can be that you gain reasons for P when P becomes less probable for you, consider a variation on the Alien Card Game. Suppose that Ponda's cheat sheet reported that a player with her cards wins exactly 47% of the time. It still seems that Ponda's report gives you a reason — a *prima facie* reason — to think that the player you are watching is going to win. Not a strong reason, admittedly. Because the *prima facie* reason to think she will win is outweighed by *prima facie* reason to think that she will lose, you do not gain an all things considered reason to think that she will win; hence you do not gain a reason that will justify belief. But as I argued above in analyzing Wright's Red Wall case, gaining a *prima facie* reason is a significant epistemic shift. In fact we can modify Wright's own objection to illustrate how your credence can decrease when you gain a *prima facie* reason: if you knew that 47% of participants received the drug and 53% a placebo, then that still seems like a sufficient reason to doubt your color vision, and hence undermine the warrant your experience would otherwise carry for the belief that the wall is red. Your experiential evidence would not be undermined unless you had some *reason* to doubt that your color vision was working properly. So similarly when Ponda's report dictates that a player with her cards wins 47% of the time, your credence that she will win drops to a (firm) 0.47 from an (uncertain) 0.5 even though you now possess a reason to believe that she will win.

I have argued that you can gain a *prima facie* reason while your credences decrease. This may not seem terribly surprising. Evidence confirms a claim if *all things considered* that evidence counts in favor of the claim; Bayesians were never committed to defining evidential confirmation in terms of *prima facie* reasons, and so they can happily accept that sometimes when you gain a *prima facie* reason for H your credence in H ought to drop — because you also

gained a stronger *prima facie* reason against H. A natural reaction to the phenomenon I am describing — where you gain reasons but leave your credences the same or even decrease them — is that it reaches a threshold at 1/2. You cannot gain all things considered reasons, much less justification, if your credences remain constant or decrease.

6 Justification With Decreased Credence?

Actually, I think this is exactly what happens in White's example. EXP provides all things considered reason and justification for ~DECEIVED and against DECEIVED even though $\Pr(\sim\text{DECEIVED}|\text{EXP}) < \Pr(\sim\text{DECEIVED})$ and $\Pr(\text{DECEIVED}|\text{EXP}) > \Pr(\text{DECEIVED})$.

Let us first see how this works with a variation on our running example, a Third Alien Card Game.[20] This time consider a game with four opponents. While in complete ignorance about the game, you deem the probability that one of your player's opponents will win is 3/4. Ponda passes you his report that says a player with her cards wins exactly one-third the time. Now your credence that an opponent will win is 2/3. Your credence that an opponent will win decreases from 3/4 to 2/3 even though you gain all things considered reason, and perhaps even justification, for thinking that an opponent will win.

How does similar reasoning play out in White's argument against dogmatism?

Schiffer voices the plausible thought that your prior probability in P cannot be high — certainly not greater than 1/2 — unless you have some justification for believing that P.[21] Both White and Schiffer assume that if consistency with probability theory requires that prior $\Pr(\sim\text{DECEIVED})$ be set quite high, that can only be explained by the fact that you have some

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[20] I am grateful to Michael Pace for discussion of this case.

[21] Schiffer (2004, pp. 175–76).

antecedent justification for ~DECEIVED. There has to be some reason to set Pr(~DECEIVED) high.

This plausible thought is incorrect. No constraints on prior probabilities exclude the possibility that Pr(~DECEIVED) be high even though you have no reason to believe ~DECEIVED and so, plausibly, no justification for believing ~DECEIVED.

One way for DECEIVED to be false is for you to have hands, for HANDS to be true. Another way is for you to lack hands without deception; for convenience let us call this option STUMPS (=~HANDS & ~DECEIVED). It might now seems that there are three possibilites, HANDS, STUMPS, and DECEIVED. White treats the case this way: he compares Moore's dilemma to a card game with three cards, one for hands, one for stumps, and one for fake hands (2006, pp. 535–37). If there are three possibilities then it is difficult to see how Pr(HANDS) or Pr(~DECEIVED) can be greater than 1/2 (or indeed anything other than 1/3). But what if we partition differently so that those three alternatives are not coequal? The following looks like a legitimate way to assign prior probabilities. There are two alternatives, that you have hands (HANDS) or that you do not (~HANDS). The alternative that you do not have hands itself has two sub-alternatives, that you have stumps or that deception masks your lack of hands. This partition suggests that DECEIVED will be true in only a quarter of the alternatives.

Dogmatist Partition

HANDS, EXP	HANDS, EXP	HANDS, EXP	HANDS, EXP
~HANDS, ~EXP =~DECEIVED = STUMPS	~HANDS, ~EXP =~DECEIVED = STUMPS	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED

In this example:

Priors	$\Pr(\text{HANDS})=\Pr(\sim\!\text{HANDS})=1/2$
	$\Pr(\text{DECEIVED})=1/4; \Pr(\sim\!\text{DECEIVED})=3/4.$
Updated	$\Pr(\text{HANDS}|\text{EXP})=2/3$
	$\Pr(\text{DECEIVED}|\text{EXP})=1/3; \Pr(\sim\!\text{DECEIVED}|\text{EXP})=2/3.$

You initially have no reason to believe ~DECEIVED and yet $\Pr(\sim\!\text{DECEIVED})$ is quite high. Upon receiving evidence EXP you gain all things considered reason to believe HANDS; in fact, you might even consider your reason strong enough to justify belief in HANDS. You have traded in your uncertainty for 2/3 certainty that you are not deceived. But notice what happens to the probability of ~DECEIVED. Even though you go from having no reason to believe ~DECEIVED to having not just reason to believe ~DECEIVED but *all things considered* reason to believe ~DECEIVED, your credence in ~DECEIVED decreases; you *replace* an uncertain credence of 3/4 with a risk of 2/3. Gaining new evidence EXP lowers your credence in ~DECEIVED but still leave it high, as high as $\Pr(\text{HANDS}|\text{EXP})$.

Similar reasoning applies to DECEIVED. Initially you have no reason to believe DECEIVED. You acquire some experiential evidence conferring all things considered reason against DECEIVED and yet your credence in DECEIVED increases. You replace your ignorance-based credence of 1/4 with an information-based credence of 1/3.

This line of response to White involves two intertwined issues that need to be untangled. One issue is the way I assigned prior probabilities. I'll return to that issue in a moment. The second issue is whether White's justification lemma — "if I gain justification for a hypothesis, then my confidence in its truth should increase" — is correct. The example above shows it is not. *If*, when you have no reason to believe H your credence is high, *then* you can gain all things considered reason, and so potentially justification, for believing H even if your

credence in H decreases. It looks like this condition is not simply vacuously true. The antecedent can be satisfied, as it is in the example Dogmatist Partition above.[22]

7 Priors

This brings us back to the first issue, how we assign prior probabilities. When I introduced the Dogmatist's Partition for the hands case I noted that it was *an* acceptable assignment of prior probabilities. I did not suggest that it is the *only* legitimate assignment of prior probabilities. How to assign prior probabilities is a recognized and vexed issue for Bayesians. It is well known, for example, assigning prior probabilities using the indifference principle seems to permit multiple inconsistent partitions, and Bayesians disagree about rational constraints on assigning prior probabilities.[23] If the Bayesian objection to Dogmatism hinges on assignment of priors, rather than on updating (as it would if PEC were true), that significantly weakens the Bayesian objection.[24] With this point in mind, let's see whether there are other partitions of the hands case that prove troubling for dogmatism. White's favored three-card game analogy, with one card each for HANDS, STUMPS, and DECEIVED, partitions as follows:

White's 3-Card Partition

HANDS, EXP	HANDS, EXP	HANDS, EXP	HANDS, EXP
~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED

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[22] The situation where your gain all things considered reason and justification while your credences decrease is unique; it does *not* generalize. It occurs in the special case where you replace credences rather than adjust them, and that happens when you transition from having no reason to having a reason. The kind of skeptical case that concerns dogmatism is just such a special case.

[23] For a specific example of inconsistent application of the indifference principle, see the Box Factory example in van Fraassen (1989). For a general overview of issues in assigning prior probabilities, see Talbott (2008).

[24] Thanks to Stewart Cohen for discussion on this point.

~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS

On this partition, your posterior credence in ~DECEIVED upon having EXP is 1/2. Or consider another partition that Matt Kotzen suggested to me, which divides alternatives first between DECEIVED and ~DECEIVED, with ~DECEIVED subdividing into STUMPS and HANDS.

Kotzen's Partition

HANDS, EXP	HANDS, EXP	HANDS, EXP	HANDS, EXP
~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS	~HANDS, ~EXP = STUMPS
~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED
~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED	~HANDS, EXP =DECEIVED

In Kotzen's partition your posterior credence in ~DECEIVED upon having EXP is 1/3. To summarize both White's and Kotzen's proposed partitions:

	White's 3-Card Partition	Kotzen's Partition
Priors	Pr(HANDS)=1/3 Pr(DECEIVED)=1/3 Pr(~DECEIVED)=2/3	Pr(HANDS)=1/4 Pr(DECEIVED)=1/2 Pr(~DECEIVED)=1/2
Updated	Pr(HANDS|EXP)=1/2 Pr(DECEIVED|EXP)=1/2 Pr(~DECEIVED|EXP)=1/2	Pr(HANDS|EXP)=1/3 Pr(DECEIVED|EXP)=2/3 Pr(~DECEIVED|EXP)=1/3

On both partitions your posterior credence that you are not deceived will be less than or equal to 1/2. Does this force the dogmatist to admit that experience cannot provide all things considered reason to believe ~DECEIVED?

The dogmatist should discard both White's and Kotzen's partitions on the grounds that they violate the dogmatism assumptions. Examine the posterior probability that you have hands versus that you do not have hands. According to both partitions, though you acquire a *prima facie* reason to think that you have hands, you gain no all things considered reason to believe that you have hands; in fact on Kotzen's partition you gain all things considered reason to think that you are handless. That is not a description of the situation a dogmatist will or should accept. The dogmatist insists that experience supplies you with all things considered reason to believe that you have hands. Now that we understand the difference between adjustment and replacement, we can see that *replacing* your no-reason-to-believe credence that you have hands with an all-things-considered-reason credence requires something other than an increase in credences, that is, something other than $\Pr(\text{HANDS}|\text{EXP}) > \Pr(\text{HANDS})$. It requires that your new information-based credence come *entirely* from an all things considered reason to believe that you have hands, that is, $\Pr(\text{HANDS}|\text{EXP}) > 1/2$. And if $\Pr(\text{HANDS}|\text{EXP}) > 1/2$, then $\Pr(\text{DECEIVED}|\text{EXP}) < 1/2$. Thus the dogmatist can insist on a partition that respects this basic dogmatist assumption and rule out partitions like White's and Kotzen's.[25]

This response raises difficult questions about constraints on prior credences. As I noted above, demanding a particular assignment of priors significantly weakens Bayesian objections to dogmatism because the objections would then rest on solving the problem of priors. But the

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[25] Remember that the critics I discuss in this paper *grant* dogmatism's assumptions and attempt to show that they lead to implausible or contradictory results. Their arguments do not directly question dogmatism's assumptions, and I am not defending those assumptions here.

simple version of the indifference principle doesn't appear to favor the dogmatist, White's, or Kotzen's partition. How might we respond to the problem of priors in light of this paper's distinction between uncertainty and risk, between having no reason and having reasons, between replacing and adjusting credences? There are several options.[26]

First, we could suspend judgment under uncertainty, where that means refuse to assign priors when we lack any reasons or information. While I myself am attracted to this alternative, obviously no Bayesian can accept it, nor can Wright and White accept it. Their objections depend on assigning a prior credence to HANDS and DECEIVED.

Second, one could jettison the Bayesian commitment to conditionalization when in a state of uncertainty. The idea would be that conditionalization is appropriate for adjustment, but not replacement; prior credences formed in the absences of reasons are meaningless once actual evidence emerges. This would in effect concede that the choice between the dogmatist, White's, and Kotzen's partitions (or any other partition that respects the principle of indifference) is arbitrary and posterior probabilities ought not to reflect the arbitrary choice. Again, I myself am attracted to this alternative and think it merits further consideration, but no Bayesian can accept it.

Third, one could provide a principled way to choose priors, either by modifying the simple indifference principle or by offering considerations that go beyond indifference. That principled way would then guide the choice between the three partitions under consideration here. To be relevant to the present debate between dogmatists and their critics, we would have

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[26] Thanks to a referee for pressing me to clarify the options here.

to be able to apply this principled way in the absence of *any* information, *any* reasons.[27] While this alternative would salvage consistency with Bayesianism, it amounts to solving the problem of priors. I find the prospects for settling the debate over priors dim.

Finally, there is the working option for this paper. Let me close by summarizing this third option and drawing the various threads of argument in this paper together. There is an intuitive difference between neutrality conferred by balanced evidence and neutrality conferred by lack of evidence. The former calls for adjusting credences; the latter calls for replacing them. If we don't respect the difference between adjusting and replacing, then we treat having *no* reason to believe that you are deceived just like we treat Wright's mandated neutrality cases, where you have *very good* reason to think that you are deceived. Intuitively we want to treat those cases differently. When you replace credences, you can gain all things considered reason, and even justification, despite the fact that your updated credences are less than your prior credences. So far, we have not mentioned dogmatism. What dogmatism adds is that, at minimum, experience supplies all things considered reason to believe that things are as they seem. Since the skeptical scenarios that most concern dogmatism are stipulated to be cases that call for replacement rather than adjustment, dogmatism in effect requires that $\Pr(\text{HANDS}|\text{EXP})>1/2$ and $\Pr(\text{DECEIVED}|\text{EXP})<1/2$. Any assignment of priors must respect that fact.[28] Thus even if White is correct that your credence that you are deceived increases upon

[27] Castell (1998) for example argues for a restricted principle of indifference, but his restriction requires that we have prior information about relevance, and I don't see that it would help select one of our three partitions over the others.

[28] In the absence of a principled resolution to the problem of priors, objectors should admit that there is nothing illegitimate about the dogmatist partition, and so cannot rest their objections on one of the other partitions. Now it is true that a dogmatist must insist on the dogmatist partition over the other two. The reason for that choice would not be any principled resolution to the problem of priors; it would be whatever arguments the dogmatist offers for dogmatism. Neither Wright nor White dispute that there are such reasons; see White (2006, §3). As a referee pointed out, this amounts to choosing priors ex post facto,

having an experience as of hands, the dogmatist can still makes sense of the claim that we gain all

things considered reason to believe that we are not deceived.

based on the epistemic theory one wants to defend. Given that we have no solution to the problem of priors, this seems an acceptable way to select priors, especially since the distinction between replacement and adjustment shows that we will simply replace uncertainty-based priors when new evidence arrives. Thanks to a referee for illuminating remarks here.

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