The Philosophical Quarterly Vol. 69, No. 276 *2019*
ISSN 0031-8094 doi: 10.1093/pq/pqz006

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HOW BELIEF-CREDENCE DUALISM EXPLAINS AWAY PRAGMATIC ENCROACHMENT

By Elizabeth Jackson

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

Keywords: belief, credence, belief-credence dualism, pragmatic encroachment, reliance, epistemic rationality.

I. INTRODUCTION

What should we believe? When considering this question, we usually think of things that are epistemic in nature, like evidence. However, recently, some have argued that what we should believe is not determined merely by *epistemic* factors, like evidence, but also *practical* factors, like how bad it would be if we were wrong. This view, often called *pragmatic encroachment*, is motivated with cases in which a belief seems perfectly fine when the stakes are low: I believe this sandwich is made with almond butter and give it to you when you ask for a snack. However, change only the stakes, and now it seems like I ought to give up the belief: I find out you are deathly allergic to peanuts, so I should no longer believe that it is made with almond butter, especially if there is a chance it is made with peanut butter instead.[1]

[1] Notable defences and discussions of pragmatic encroachment include Hawthorne (2003), Stanley (2005), Weatherson (2005), Ganson (2008), Fantl & McGrath (2002, 2009), Grimm (2011),

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There is nonetheless something odd about pragmatic encroachment.[2] Can stakes alone really affect the epistemic rationality of belief in this way, without a change in evidence or any other epistemic factor? In this paper, I offer a way out for those who are sceptical of pragmatic encroachment.[3] I do so by presenting a picture of the mind on which there is not one, but two fundamental doxastic attitudes. On this view, that I call *belief-credence dualism*, we have not only beliefs but another doxastic attitude: credences.[4] Credences are fine-grained attitudes, similar to levels of confidence, that are correlated with subjective probabilities.[5] These two attitudes function as complementary epistemic tools, and our practical situation determines which we ought to rely on in practical reasoning.

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

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

Pace (2011), Schroeder (2012), Weatherson (2012), Ross & Schroeder (2014), Locke (2014, 2017), Roeber (2018b), and Kim (2017).

[2] See Kim (2017: 1, 7).

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

[4] Notable defences and discussions of dualism include Pollock (1983, 1994), Adler (2002), Frankish (2004), Hawthorne (2009), Sosa (2011: ch. 4), Weisberg (2013, forthcoming), Friedman (2013a), Ross & Schroeder (2014), Buchak (2014), Littlejohn (2015), Carter, Jarvis & Rubin (2016), and Jackson (2018, forthcoming b, forthcoming c).

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

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II. PRAGMATIC ENCROACHMENT

The pragmatic encroachment debate is about whether practical interests can affect the epistemic status of particular kinds of mental states—in slogan form, about whether 'the practical encroaches on the epistemic' (Kim 2017). Early in the debate, many people focused on whether practical factors can affect *knowledge* (Hawthorne 2003; Stanley 2005), but lately, many have been focusing on whether the practical can affect epistemically *justified belief* (Fantl and McGrath 2002, 2009; Ganson 2008; Kim 2017: 2; Nagel 2008, 2010a,b; Ross and Schroeder 2014; Schroeder 2012; Thomason 2007, 2014; Weatherson 2005). Of course, the practical might affect knowledge by affecting justified belief, so these foci are not mutually exclusive and are even potentially complementary. In this paper, I will follow Ross and Schroeder (2014: 260) and focus on the ways that the practical might affect the epistemic justification or rationality of belief.[6] The phenomenon I will seek to explain away is *pragmatic encroachment on epistemically justified belief*.

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

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

So-called *purists* resist this verdict. After all, it seems quite odd that a mere change in stakes—without a change in evidence, reliability, or any other epistemic factor—could change what one is epistemically justified in believing.[7] Yet the purist still needs an explanation for cases like the bank cases above.

[6] I will not distinguish between epistemic justification and epistemic rationality for the purposes of this paper.

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

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In what follows, I explain belief-credence dualism and then argue that it can offer a unique purist explanation for the above cases. My explanation relies on the distinction between justifiedly having a belief and justifiedly relying on it in reasoning.

III. BELIEF-CREDENCE DUALISM

III.1. Background

There are at least two kinds of attitudes we have that describe or represent the world: beliefs and credences.[8] Belief is a familiar attitude that is not degreed; roughly, belief is a propositional attitude one has when one takes something to be the case or regards it to be true (Schwitzgebel 2015). There are three belief-like attitudes one can take toward a proposition p; one can believe p, one can withhold belief with respect to p, and one can disbelieve p.[9]

Sometimes our attitudes are more complex than simple beliefs; for example, we might believe p and believe q but be more confident in p than in q.[10] This is one reason why epistemologists appeal to another attitude they call *credence*. Credence represents something like the subjective probability of p, often given a value on the [0, 1] interval. Credences are, in many ways, similar to the more familiar attitude of confidence.

The way beliefs and credences relate to one another is controversial.[11] Some have argued for a credence-first view: that beliefs reduce to credences;[12] others have argued for a belief-first view: that credences reduce to beliefs.[13] In this paper, my primary target will be proponents of the credence-first view, who argue that belief is nothing over and above high credence; a common credence-first view is that belief is credence above some threshold.[14]

[8] Some eliminativists deny this (see Churchland 1981; Jeffrey 1970; Maher 1993: 152–55), but I set eliminativism aside for the purposes of this paper.

[9] Although Friedman (2013b) argues that we suspend on questions, rather than propositions.

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

[11] See Jackson (forthcoming a) for an extended discussion of why the relationship between belief and credence is an important epistemological question.

[12] Defences and discussions of credence-first include Foley (1992, 1993: ch. 4, 2009), Hunter (1996), Bouvens & Hawthorne (1999), Christensen (2004), Weatherson (2005), Douven & Williamson (2006), Ganson (2008), Sturgeon (2008), Frankish (2009), Chandler (2010), Smith (2010), Pace (2011), Dallmann (2014), Locke (2014), Pettigrew (2015a,b), Leitgeb (2013, 2014), Dorst (2017), and Lee (2017a,b).

[13] Defences and discussions of belief-first include Harman (1986, 2008), Holton (2008, 2014), Plantinga (1993: ch. 1), Easwaran (2015), Moon (2018), Kauss (forthcoming), and Jackson & Moon (MS).

[14] Some credence-firsters (e.g. Ganson 2008; Pace 2011; Weatherson 2005) maintain the threshold for belief is context or stakes dependent. Other credence-first views reduce belief to some other formal feature of credence, such as Leitgeb's stability theory (see Leitgeb 2013,

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Dualists maintain that beliefs are not reducible to credences, and credences are not reducible to beliefs.[15] Rather, we have both attitudes and they are equally fundamental. Most dualists hold this because both attitudes play unique, indispensable roles in our mental lives. For example, Weisberg (forthcoming: 8) suggests that 'our [beliefs and credences] are realized in largely separate mechanisms. In us, [belief and credence] are largely metaphysically distinct. . . [we should not treat] either as secondary, in either our psychological or our epistemological theorizing.' Note that dualism is a descriptive claim about belief and credence. In this paper, I remain neutral about whether there are normative connections between the two attitudes.

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

III.2. Motivations for dualism

In this section, I explain one of the primary motivations for dualism, which purports to show that dualism explains features of our mental lives and reasoning that a credence-first view cannot. Then, in the following sections, I will show how the motivation for dualism discussed here explains what is going on in pragmatic encroachment cases without forcing us to commit to the pragmatic encroachment thesis.

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

I will focus on a particular role of belief that is pioneered by Ross and Schroeder (2014: 286), among others.[16] The view is summarized nicely by Staffel (2017: 42): 'cognitively limited agents like us need outright beliefs, because they simplify our reasoning. In adopting outright beliefs, an agent takes the believed claims for granted in her reasoning, which frees her from having

2014). Another possible credence-first view says that belief that p doesn't reduce to merely one's credence in p, but rather reduces to facts about one's credal state as a whole. Thanks to Lara Buchak.

[15] See footnote 4 for a list of authors who defend dualism.

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

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to pay attention to small error probabilities.' In other words, one role of belief is that it *simplifies* our reasoning.

In reasoning, we have at least two aims—accuracy and efficiency. That is, we want our cognitive attitudes to accurately reflect our evidential situation. However, representing our evidence with perfect accuracy is not always required for us to meet our practical and epistemic goals; often, a close approximation will do. Since we have limited cognitive resources, sometimes it makes more sense to rely on attitudes that are less than perfectly accurate to lighten our cognitive load. This is supported by a popular psychological theory called the 'adaptive toolbox' model, on which the method we use for decision making depends on the situation, and one of our primary goals is to pick a decision tool that is maximally efficient but accurate enough for our circumstances.[17] Following Weisberg (forthcoming: 9–10), I propose that belief and credence are two cognitive tools that enable us to balance those goals.[18]

For many propositions, we have both a belief-attitude in p and a credal-attitude in p. In reasoning, we can rely on either our belief-attitude or our credal-attitude. The one we rely on depends on practical factors, and this allows us to appropriately balance efficiency and accuracy in reasoning (Staffel 2017: 46). Here is how: when one relies on one's belief that p, one rules out the possibility of not-p. This makes reasoning about p much easier; one reasons holding p fixed. In contrast to reasoning holding p fixed, there is a more complex way to reason that takes more time and effort: reasoning considering additional possibilities, e.g., both p and not-p. If one is agnostic about whether p, and p is relevant to one's reasoning, one will often reason treating both p and not-p as live.[19] In other cases, one may one believe p or believe not-p, but expand the possibility space for other reasons. There is psychological evidence that altering the possibility space under consideration in our reasoning is particularly cognitively costly (Bettman, Johnson and Payne 1990: table 7). Yet when the stakes are high, reasoning considering additional possibilities can be appropriate and even obligatory.[20]

[17] See Payne, Bettman & Johnson (1993), Gigerenzer & Goldstein (1996), Gigerenzer, Todd & ABC Research Group (1999), and Payne & Bettman (2004).

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

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

[20] Although small changes in stakes may not prompt the move to credence reasoning, e.g. a changing the prize of a bet from $10 to $20, the stakes need to be sufficiently high in order to prompt a change in the space of possibilities. Thanks to Brian Kim. This raises another potential worry: suppose the stakes are intermediate, such that it is not obvious whether we ought to rely on our belief or our credence in reasoning. Deciding which to rely on may make our reasoning more, rather than less, complex. In reply, while reasoning about what to do often occurs occurrently in the cases I consider, reasoning about *how to reason* does not; we often move from belief to credence reasoning due to an automatic instinct, rather than an intentional process. Further, in the intermediate case, it may not matter whether agents rely on their belief that p or their

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

Consider an analogy. When painting a wall, we use two kinds of brushes. We use a big roller brush to efficiently paint the main flat surface of the wall, where mistakes are not very costly. We use a small detail brush to paint the corners, around the door, and other places where mistakes would be much worse. If we painted the entire wall using the detail brush, we would be very accurate but painfully inefficient. If we painted the entire wall using the roller brush, we would be very efficient but, on some parts of the wall, sloppy and inaccurate. We need both tools in order to paint both accurately and efficiently. All else equal, it might be easier to use only one tool and not be forced to switch back and forth. However, given the importance of both efficiency and accuracy, switching back and forth between the two tools is a much better policy than using a single tool to paint the entire wall.[21] This analogy illustrates the way in which my view answers the *Bayesian Challenge* for dualism—namely, the challenge that we do not need both beliefs and credences to explain the rationality of action/inference/assertion (see Frankish 2009; Kaplan 1996; Stalnaker 1984; Sturgeon 2008; Weisberg forthcoming). According to the challenger, if beliefs make the same prescriptions as credences, they are superfluous; if they make different ones, we should trust those made by our credences. However, as the paintbrush analogy suggests, beliefs are not superfluous to action/inference/assertion; we need both beliefs and credences to strike an appropriate balance between accuracy and efficiency in reasoning (which will, in turn, affect action and assertion).

Note further that credence-firsters cannot explain the simplifying role of belief in the same way. According to the credence-first view, belief *just*

credence, because, since the stakes are intermediate, the accuracy gain from using credence reasoning may wash out whatever expected utility is gained by hedging one's bets. Thus, the instinct to move to credence reasoning may not kick in until the stakes are sufficiently high to justify the switch (although this may depend on the agent, whether she is rational, etc.). Thanks to an anonymous referee for raising this objection.

[21] Thanks to Blake Roeber and Jennifer Nagel.

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is a credence above some threshold. Even if an agent has a high enough credence in p to justify acting as if p, in virtue of having a *credence* in p, they are considering the possibilities of both p and not-p; both possibilities are live for them.[22] In this, they do not have an automatic or defeasible disposition to treat p as true; rather, they must consider both p and not-p, and then judge whether the stakes are such that they can rationally act as if p. This requires a much more complex calculation than an agent who simply treats p as given in her reasoning automatically and never considers the possibility of not-p (Ross and Schroeder 2014: 270; Weisberg forthcoming: 11–16, 20–23). As Weisberg notes, 'Before an assumption can be made, its [credence] has to be compared to some threshold, and the possibility that it's false must then be discarded. . . [but] these are exactly the kinds of extra computational operations an adaptive decision maker is supposed to minimize' (forthcoming: 10–12). Further, altering the possibility space in question is one of the most expensive tasks in terms of cognitive effort (Bettman, Johnson and Payne 1990). Thus, if beliefs are merely high credences, it is hard to see how they could be their own cognitive tool, or how they could enable us to reason more efficiently. Belief cannot play the same simplifying role on a credence-first view that it does on a dualist view.

One might wonder whether a belief-first view can maintain, like the dualist, that beliefs simplify reasoning. For example, an agent might rely on her belief that *p* when the stakes are low, but rely on her belief that *the probability of p is 0.9* when the stakes are high.[23] In this paper, I take my main opponent to be the more dominant credence-first view, and I officially remain agnostic as to whether a belief-first view can employ the same purist explanation as the dualist. However, even if a belief-firster can use beliefs with different contents to mimic the dualist picture, it is nonetheless unclear how, on a belief-first view, belief and credence are two different cognitive *tools*; there is a single attitude whose content is varied, depending on the stakes. It is hard to see how a belief-firster could aptly employ the paintbrush analogy discussed above, since there are not two tools; there are just beliefs with different contents. At the very least, whether a belief-first view can explain away pragmatic encroachment requires further development, and this picture will look quite different than the dualist one. I pursue the dualist response because I think it is a more plausible picture of the mind, and because it can most clearly explain away pragmatic encroachment.

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

[23] Thanks to an anonymous referee.

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IV. HOW DUALISM EXPLAINS AWAY PRAGMATIC ENCROACHMENT

IV.1. My view

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

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

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

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

Note here that the phrase 'rely on in reasoning' is meant to apply to practical reasoning (reasoning about what to do). There is a further question, namely, can stakes affect whether it is rational to rely on a belief in theoretical reasoning (reasoning about what to believe)? On this question, I remain agnostic.[24]

IV.2. Having a belief vs relying on it in reasoning

One question that immediately arises upon considering (1*) and (2*) is what it means to have a belief but not rely on it in practical reasoning.[25] On some

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

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

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views of belief, if one does not treat p as given in reasoning, one does not believe p. However, this is too quick. Of course, in many circumstances, there is a correlation between belief that p and treating p as a given in reasoning. But there are cases where one has a justified belief but ought not to rely on it, due to sufficiently high stakes (Dallman 2014: 2307–8). Consider the following cases from Jessica Brown and Baron Reed:

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

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

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

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

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

This distinction between having a belief and relying on it in reasoning helps us make sense of the cases that are central in the pragmatic encroachment debate, and see why they ultimately need not support pragmatism. We can maintain that facts about whether one ought to believe p do not change unless one's epistemic situation changes; justifiedly having a belief is not sensitive to stakes. However, stakes are one of the major factors that determine whether one ought to rely on a belief in reasoning. Thus, pragmatism about rational *reliance* on a belief is true.[26]

Part of what I am proposing is an error theory for our pragmatic encroachment intuitions (cf. Hawthorne 2003: 211–26; Nagel 2008; Williamson 2005). When we consider pragmatic encroachment cases, we have the intuition that stakes can affect the rationality of a belief, but in this judgement, we are not clearly distinguishing between justifiedly *having a belief* and justifiedly *employing a belief in reasoning*. Consider the bank cases again. In the second version of the case, suppose Hannah decides to wait in the long line even though she has the memory of the bank's being open tomorrow. Her friend Sarah asks 'Why are you waiting in line? The bank will be open tomorrow, so you can deposit the check then when the lines are much shorter.' As Roeber (2018a: 19) points out, it would be reasonable for Hannah to reply, 'I know. But I figure I should play it safe and deposit the check now.' Hannah need not give up her belief that the bank is open tomorrow; continuing to believe this is not irrational. Rather, her situation is such that she ought not to rely on this belief when deciding what to do, given what is at stake.

One might worry that a satisfying error theory for pragmatic encroachment cannot merely appeal to justified belief, but must apply to knowledge, as the primary intuition about what is lost in high-stake cases concerns the latter.[27] My response is twofold. First, we do have the intuition that justified belief is lost in high-stake cases; these intuitions are more clearly brought out when things are worded less technically; instead of focusing on 'epistemically justified belief', merely focus on what high-stake agents should believe. Then, the intuition is much clearer; for instance: 'Hannah shouldn't believe the bank is open tomorrow. She could default on her loans!' Further, this error theory can be

[26] Alonso (2014: 163). Thanks to JJ Lang.
[27] Thanks to an anonymous referee.

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extended to pragmatic encroachment on knowledge. In the same way that, in high-stake cases, Hannah should not rely on her belief that p in reasoning, Hannah also should not rely on her knowledge that p in reasoning. Like the belief case, our intuitions are not clearly distinguishing between knowing something and relying on that knowledge. Further, the above cases (Birthplace, Surgery, Marriage, and Jellybean) are all ones in which the agents can plausibly be construed as knowing, but nonetheless ought not rely on their knowledge that p in their reasoning. Thus, even if a belief amounts to knowledge, we may not be justified to rely on it in reasoning. (I discuss this more in Section V.2 below.)

To clarify my proposal, it may be helpful to contrast it with other related, recent literature. Ross and Schroeder (2014) also draw connections between dualism and pragmatic encroachment.[28] However, Ross and Schroeder conclude that pragmatic encroachment occurs. More specifically, their view is that there is pragmatic encroachment on *occurrent justified belief*, but not on non-occurrent justified belief. [29] In a low-stake context, one can occurrently believe p; in a high-stake context, one may only retain one's belief non-occurrently.[30] In other words, Ross and Schroeder maintain that if S has a justified occurrent belief that p, S ought to rely on p in her reasoning. However, I think it is clear that we can have a justified occurrent belief that p, but nonetheless need not rely on p in our reasoning.[31] The cases above, Birthplace, Marriage, Surgery, and Jellybean, are examples of this: cases where one rationally occurrently believes p yet ought not rely on p in reasoning. In addition, I maintain a strict purism about all justified belief: both occurrent and non-occurrent. Thus, while we are responding to similar psychological facts, they draw the wrong lessons from them.[32]

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

One might wonder whether this insight—that in high-stakes cases, one can believe p but cannot act on p—is consistent with a credence-first view.

[28] For objections to Ross and Schroeder, see Locke (2014) and Tang (2015).

[29] Thanks to Blake Roeber.

[30] Ross & Schroeder (2014: 271). This follows from the principle they call 'Justification Condition on Occurrent Attitudes'.

[31] Locke (2014) raises a similar objection to Ross and Schroeder's view.

[32] Thanks to Blake Roeber and Lara Buchak.

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After all, maintaining that beliefs *just are* high credences seems consistent with the idea that belief and action can come apart.[33] In response, while I agree these are strictly speaking consistent, it is hard to see *why* belief and action would come apart in this way on the credence-first view. As I argued above, credence-firsters cannot maintain the simplifying role of belief. If belief and credence are equally complex—because belief is nothing over and above a high credence—then it is hard to see why belief would be correlated with low stakes and credence with high stakes, because there would not be any efficiency payoff in relying on a belief when the stakes are low. So, a credence-firster can pull apart belief and action, but the dualist can explain *why* belief and action come apart: beliefs are relied on in low-stake cases and credences relied on in high-stake cases, and the mental state one relies on in reasoning affects how one ought to act.

IV.3. Psychological evidence

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

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

[33] Thanks to an anonymous referee.

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more.[34] Participants in many of Kahneman's studies were more likely to rely on System 2 when the stakes were higher, e.g. they were given money or a desirable reward for getting a problem correct.[35] In some cases, belief-reasoning looks a lot like System 1 reasoning, as both are efficient and generally our default way of reasoning and thinking about the world (see Carter, Jarvis and Rubin 2016: 2338). However, credence-reasoning—especially precise, careful credence reasoning—looks much more like System 2 reasoning, as it is more costly and less efficient, but can enable to us avoid errors. I do not commit to the idea that belief-reasoning is always System 1 reasoning, nor that credence reasoning is always System 2 reasoning (because, for example, sloppy or simplified credence reasoning may resemble certain types of System 1 reasoning). However, the two-system/dual-process models further support the idea stakes affect reasoning, and whether we rely on a belief or a credence depends on what is at stake.[36]

Further, there is a psychological phenomenon called 'need-for-closure', and this describes how quickly subjects come to settle a question after opening inquiry on some matter. High need-for-closure is associated with quick decision making, low stakes, and/or the need to settle some question as soon as possible. Subjects with low need-for-closure, on the other hand, leave questions open for longer and take their time making up their mind. Psychological studies have shown that one major factor that diminishes our need for closure is higher stakes; we will take longer to think through an answer if it is especially important we get it right, e.g. because there is a reward involved (Kruglanski and Freund 1983; Kruglanski and Webster 1991, 1996). Further, as Weisberg (forthcoming) suggests, it is plausible that closure often involves the decision to form or rely on a belief; this also fits well with Jane Friedman's account of belief (2011). If this is right, then belief-reasoning is correlated with high need-for-closure (the desire to make up one's mind quickly) and low stakes, and credence-reasoning is correlated with low need-for-closure (the desire to take one's time and think through some matter) and high stakes.[37] Thus, we tend to settle on or rely on a belief when there are high benefits and low cost for closure. Credences, on the other hand, come up when it is costly to close inquiry because, for example, there is a significant risk involved.[38]

[34] Kahneman (2013: ch. 1, 13, 14, and 16). See also Kahneman, Slovic & Tversky (1982). For a more recent defence of dual process theory, see Evans & Stanovich (2013a,b). Thanks to Jennifer Nagel.

[35] Kunda (1990) and Lerner & Tetlock (1999). See also Nagel (2008, 2010a,b).

[36] Further psychological evidence for dualism is nicely summarized by Weisberg (forthcoming) and includes Webster & Kruglanski (1994, Kruglanski & Webster 1996). See also Nagel (2008, 2010a,b).

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

[38] Thanks to Lara Buchak.

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The following chart summarizes the basics of my view:

	Having the attitude	**Relying on the attitude in reasoning**
Belief that p	♦ Rationality purely a function of one's epistemic situation ♦ Has the property of *stability*: does not change in virtue of an evidentially irrelevant change in credences/preferences (Ross and Schroeder 2014: 277)	♦ Rationality a function of one's epistemic and practical situation ♦ Entails treating p as given/ accepting p (in most cases) ♦ Correlated with high need-for-closure and System 1 reasoning
Credence that p	♦ Rationality purely a function of one's epistemic situation ♦ When occurrent, rational credence fluctuates to mirror one's epistemic situation (e.g. as our degree of justification or evidence changes)	♦ Rationality a function of one's epistemic and practical situation ♦ Entails considering both p and not-p ♦ Correlated with low need-for-closure and System 2 reasoning

V. OBJECTIONS

V.1. What is belief?

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

First, the idea that it is possible to have a belief but not rely on it in reasoning is consistent with most of the major theories of belief: dispositionalism, representationalism, functionalism, and primitivism.[39] For example, as William Alston notes, having a belief might be associated with a set of defeasible dispositions, e.g. if S believes p, then. . .

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

All of these characteristics of belief are consistent with my view. Not only does my view fit with many versions of dispositionalism about belief, but it is also consistent with representationalism about belief: one believes p iff one represents the world's being such that p. It is merely that, if the stakes become high enough, one ought to be willing to take into consideration the possibility of error. One represents the world's being such that p, but not with probability

[39] For an overview of the different theories of belief, see Schwitgebel (2015).

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1. My view fits with functionalism about belief as well. Finally, it might be that belief is a primitive concept; 'belief' is a familiar part of our everyday discourse and my view is consistent with treating it as a primitive.

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

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

One might object that expressions of the form 'I believe p but maybe not-p, so I should hedge my bets' should not necessarily be taken indicators of one's believing p, but are simply expressions of high credence. If one truly believed p, they would simply assert p; asserting 'I believe p' is rather a way of hedging with respect to p.[40] In response, *ceteris paribus*, we should take people's claims about their own mental states at face value. Of course, we cannot rule out that these statements of belief express high credences, but I think an account that takes the statements literally should be preferred to one that does not. Further, on my account, an assertion that p is generally correlated not merely with believing p, but with something stronger: a reliance on one's belief in reasoning. Thus, statements like 'p, but maybe not p' or 'p, but there's a chance I'm wrong', sound odd, because the first conjunct indicates a reliance on one's belief that p, and the second indicates a reliance on one's credence in p, and as Staffel (2017) argues, we do not rely on both attitudes at the same time. So, while most cases of assertion that p indicate belief that p, having a belief that p, even if occurrent, may not always license a flat-out assertion that p.

This raises the question: What does it mean to occurrently believe p, if it is possible to occurrently believe p without relying on p in one's reasoning?[41] On my view, when agents occurrently believe p at time t, they recognize the fact that they believe p at t; the proposition is at the forefront of their mind

[40] Thanks to an anonymous referee.
[41] Thanks to an anonymous referee.

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and they are immediately aware of the fact that they believe it. However, that does not entail that they will or ought to rely on p in their reasoning; one can be considering p, acknowledging that they believe p, but nonetheless rely on their credence in p in reasoning about what to do. Further, the various theories of belief, e.g. functionalism, do not commit us to any particular view of what occurrent beliefs are like, and thus my view of belief need not rule them out.[42] On my view, then, we can distinguish the following four states/acts:

- Believing p (can be non-occurrent).
- Occurrently believing p, i.e. p is at the forefront of your mind, and you recognize that you believe it.
- Relying on p in reasoning, i.e. treating p as a premise in practical reasoning.
- Acting as if p (which may come apart from reliance in, e.g. weakness of will cases).[43]

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

V.2. What about principle-based arguments for pragmatic encroachment?

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

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

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

If my argument above succeeds, then the JB-action principle is false; Birthplace, Surgery, Marriage, and Jellybean are all counterexamples to it. Thus, I have provided a reason to question any principle-based argument for pragmatic encroachment that relies on the JB-action principle. However, recall at the beginning of the paper that I shifted focus to justified belief, but knowledge has traditionally been the subject of the pragmatic encroachment debate. A

[42] Thanks to Callie Phillips.
[43] Thanks to Kate Finley.

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more widely discussed principle used to motivate pragmatic encroachment is the following:

Knowledge-action principle: If S knows that p, it is rational for S to act as if p.[44]

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

There are many other principles besides the two above the proponents of pragmatic encroachment have used in arguments for pragmatism; Roeber (2018a) discusses at least five others. While I do not have space to consider each of these in detail, I note the following general observation. Almost all of the principles draw a close connection between belief/epistemic justification/knowledge and action: e.g. actions one can/is willing to/ought to perform. However, presupposing a tight connection between the epistemic and the practical from the beginning and using this connection to argue for pragmatic encroachment seems somewhat dialectically inappropriate. The tight connection between the practical and the epistemic is the very connection that many purists deny. In sum, while I do not take myself to have successfully diffused all the principle-based arguments for pragmatism, my arguments provide a reason to be sceptical of many of them.[45]

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

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

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VI. CONCLUSION

I conclude that belief-credence dualism can offer a unique explanation for pragmatic encroachment. I explained a dualist picture of the mind on which belief and credence are two cognitive tools that enable us to balance efficiency and accuracy. Then, I argued that there is a crucial distinction between having a belief and relying on a belief in reasoning. Once this distinction is salient, one can see that high stakes do not require agents to give up their beliefs; instead, high stakes make it such that agents ought to rely on their credences instead of their beliefs. Thus, we need not commit ourselves to pragmatic encroachment in order to explain the intuitiveness of the cases that motivate it; belief-credence dualism can explain these cases, vindicating purism.[46]

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[46] Thanks to Lara Buchak, Brian Kim, Robert Audi, Jason Stanley, Casey Swank, Blake Roeber, Fritz Warfield, Daniel Nolan, Lizzie Fricker, Rima Basu, Jennifer Nagel, JJ Lang, Paul Blaschko, Fr. Raphael Mary, Callie Phillips, Sara Bernstein, Jeff Speaks, the Notre Dame Spring 2018 Dissertation Seminar, and audiences at the 2019 Central APA, the 2018 Central States Philosophical Association, the 2018 World Congress of Philosophy, the 2018 WIPHICA Workshop, and the 2018 Central APA for helpful feedback and comments that improved this paper in many ways. Thanks also to Rebekah Jackson for valuable copyediting assistance.

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University of Notre Dame, USA

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