

Why Credences Are Not Beliefs

Elizabeth Jackson

To cite this article: Elizabeth Jackson (2022) Why Credences Are Not Beliefs, Australasian Journal of Philosophy, 100:2, 360-370, DOI: [10.1080/00048402.2020.1867210](https://doi.org/10.1080/00048402.2020.1867210)

To link to this article: <https://doi.org/10.1080/00048402.2020.1867210>



Published online: 10 May 2021.



Submit your article to this journal [↗](#)



Article views: 170




View related articles [↗](#)



View Crossmark data [↗](#)



Why Credences Are Not Beliefs

Elizabeth Jackson 

Ryerson University

ABSTRACT

A question of recent interest in epistemology and philosophy of mind is that of how belief and credence relate to each other. A number of philosophers argue for a *belief-first view* of the relationship between belief and credence. On this view, what it is to have a credence just is to have a particular kind of belief—that is, a belief whose content involves probabilities or epistemic modals. Here, I argue against the belief-first view: specifically, I argue that it cannot account for agents who have credences in propositions that they barely comprehend. I conclude that, no matter how credences differ from beliefs, they do not differ in virtue of adding additional content to the believed proposition.

ARTICLE HISTORY Received 4 May 2020; Revised 27 November 2020

KEYWORDS belief; credence; belief-first; graspability; attitude; content

1. Introduction

I believe many things. I believe that $1 + 1 = 2$ and that my car is parked in front of my house. I also withhold belief on propositions—for example, that there is an even number of stars. And I disbelieve that it is 75 degrees in Antarctica right now and that $1 + 1 = 3$. Many epistemologists focus on belief, withholding, and disbelief: we can call these *belief-attitudes*. But I'm more confident that $1 + 1 = 2$ than that my car is parked outside (I haven't seen my car since yesterday), even though I believe both things. For this reason, some epistemologists appeal to a second attitude, called *credence*. Credences are given a value on the $[0, 1]$ interval, where 1 represents maximal confidence that some proposition is true and 0 represents maximal confidence that it is false. I have a credence of almost 1 ($\sim 0.99999 \dots$) that $1 + 1 = 2$, but a credence of 0.99 that my car is parked outside, and a 0.5 credence that a fair coin will land heads.

Assuming that we have both beliefs and credences, a natural question arises: how do they relate to each other?¹ Does either belief or credence reduce to the other? There are three main answers to this question. On the **credence-first view**, belief reduces to credence.² On the **dualist view**, belief and credence are equally fundamental.³

The focus of this paper is on a third view, the **belief-first view**, that reduces credence to belief.⁴ This view was originally characterised as one in which credences

¹ For an overview of the relationship between belief and credence, see Jackson [2020].

² See Foley [1993], Christensen [2004], Wedgwood [2012], and Pettigrew [2015].

³ See Buchak [2014], Ross and Schroeder [2014], Staffel [2017], Jackson [2019], and Weisberg [2020].

⁴ Authors who discuss the belief-first view sympathetically include Harman [1986], Plantinga [1993: ch. 1], Lance [1995: sec. 4], Schiffer [2003: 200], Holton [2008, 2014], Weisberg [2013: sec. 3.1], Easwaran [2016], Horgan

are beliefs about *probabilities*, and so my 0.9 credence that it will rain tomorrow is a belief with the content *the probability that it will rain tomorrow is 0.9*.⁵ More recently, belief-firsters have claimed that credences are beliefs whose content is about not just probabilities, but are epistemic modals more generally.⁶ For instance, a high credence that it will rain tomorrow is the belief that *it will probably rain tomorrow*, where ‘probably’ is an epistemic modal. Credences can involve other epistemic modals, like ‘definitely’ and ‘might.’ Here is a version of that view:

Belief-First. For S to have a credence of n in p just is for S to believe (Mp) , where M is an epistemic modal and M and n correspond to each other.⁷

Of course, this is only one possible belief-first view, but I focus on it because it has several advantages. First, it answers David Christensen’s [2004: 18] challenge to the belief-first approach: if credences are probability-beliefs, what is the interpretation of probability involved in the content of these beliefs? Its answer is *epistemic probability*, which picks out a relation between one’s credences and one’s evidence.⁸ Epistemic probability is more plausible than the answers that Christensen considers—namely, the subjective and the frequentist interpretations of probability [ibid.: 19–20]. Further, on this belief-first view, credences can be precise—when one forms an explicit belief about the probability of some proposition, for example, believing *the probability that the coin lands heads is 0.5*. But they can also be imprecise—when one’s credence involves an epistemic modal that doesn’t make a precise probability judgment, for example, that *it will probably rain tomorrow*.

In this paper, I present a new objection to the belief-first view. My argument involves *edge-propositions*. P is an edge-proposition for S iff p is on the edge of S’s comprehension, such that S can grasp p , but, for any proposition more complex than p , S cannot grasp it. The objection that I present here is a problem for any belief-first view that reduces a credence in p to a belief that (Xp) . It doesn’t matter what X is; it could be probability, likelihood, epistemic modals, beliefs about dispositions, or some other modal or numerical component.⁹ Call any belief-first view that reduces a credence in p to belief in some content that is more complex than p a *content-enhancing* belief-first view. While I will proceed by utilising the epistemic-modal view above, my objection applies to any content-enhancing view, which is almost every belief-first view in the literature.¹⁰

This paper is structured as follows. In **section 2**, I explain and defend my argument, showing how it counts against the belief-first view. In **section 3**, I consider and reply to objections. I conclude in **section 4**.

[2017], Dogramaci [2018: 10], Moon [2018, 2019], Moon and Jackson [2020], and Kaus [2020]. Weisberg [2013] suggests that Hawthorne and Stanley [2008] ought to endorse the belief-first view. Authors who provide objections to belief-first include Kaplan [1996], Christensen [2004: 18–20], Frankish [2009: 76–8], Eriksson and Hájek [2007: 206–7], Staffel [2013], Moss [2018: 7–8], and Lee [2017: 278–9].

⁵ See Christensen [2004: 18–20].

⁶ See Moon [2018, 2019], Sturgeon [2020], and Moon and Jackson [2020].

⁷ See Moon and Jackson [2020].

⁸ See Easwaran [2015], Sturgeon [2020], and Moon and Jackson [2020].

⁹ Sarah Moss [2018] has a view of credences that she calls a ‘simple attitude, complex content’ view, and so my argument might be a problem for her view as well. However, Moss denies that beliefs and credences are propositional attitudes. So, it is less clear how the arguments in this paper apply; this partially depends on what is required of an agent mentally and phenomenally so as to have a belief whose content is a probability space, rather than a proposition.

¹⁰ Possible exceptions include Easwaran [2016] and Kaus [2020].

To explain what I mean by ‘grasping’ or ‘graspability’, we should examine the ways that the term is used by philosophers. ‘Grasping’ arises frequently in the epistemology of understanding literature. Consider an example from David Bourget [2017: 285–6]:

Jane had been smoking for over fifteen years. Thanks to the government’s aggressive information campaign, she was fully informed about the dangers of smoking, but this never compelled her to quit. One day, a colleague of hers who was also a smoker was diagnosed with lung cancer. Learning about her colleague’s condition helped Jane grasp the dangers of smoking and made her quit for good.

In this case, Jane initially does not grasp the dangers of smoking in the sense that she doesn’t fully appreciate (and act upon) her belief that smoking is dangerous. When her colleague is diagnosed with cancer, she ‘grasps’ the dangers of smoking in a new way, but, arguably, this does not involve her forming any new beliefs. Several have argued that, instead, what has changed is that Jane now *understands* the danger of smoking. This sense of grasping is often used to distinguish believing *p* or knowing *p* from understanding *p*.

The sense of grasping that concerns us here is different. In this paper, I’m interested in a much thinner sense of grasping—namely, the minimal ability to comprehend a proposition, such that one can form a belief-attitude (or other attitude) with the proposition as its content. Of course, what is graspable is agent-relative. For example, Bengson [2015] discusses the famous mathematician Ramanujan, who can easily grasp mathematical propositions that ordinary people cannot grasp (because the propositions are too complex). Similarly, adults can often grasp and form attitudes toward propositions not graspable for children. Our sense of graspability often comes up in the literature on epistemic justification, specifically in discussions of internalism’s strong awareness condition and infinitism.¹¹ I will use the terms ‘grasp’/‘grasping’/‘graspability’ to refer to this weaker sense of grasping, associated with the minimal comprehensibility of a proposition.

2. The Argument

Sally’s two friends, Erica and Billy, are fighting. Sally is telling her mother about this fight, and she says the following: ‘He said that she said that she knows that he believes that she is mad at him.’ Her mother, concentrating and listening carefully, barely grasps this proposition; let’s suppose that it is just at the edge of her comprehension. Sally’s mother knows that Sally tends to side with Billy on things. So, when Sally’s mother grasps this proposition she is somewhat sceptical, and is thus only moderately confident that it is true. In other words, she forms a moderately high credence that ‘he said that she said that she knows that he believes that she is mad at him.’

Consider a second example. Suppose that John is a strong internalist who holds the view that, in order for *S* to have a justified belief that *p*, *S* must have a justified belief that *S*’s belief that *p* is justified. Suppose that John believes *p*. He then wonders if his belief that *p* is justified. He forms a new belief that ‘My belief that *p* is justified.’ He then wonders if this new belief is justified, and then forms the belief that ‘My belief that (my

¹¹ Infinitism about justification is the view that a belief is justified by a belief in an infinite proposition or by an infinite number of beliefs. In response, some argue that since we cannot *grasp*, and thus cannot form beliefs about, an infinite proposition (or have an infinite number of propositions), infinitism cannot be true. See Audi [1993], Klein [1999], Bergmann [2005: 432, 2006: ch. 1], and Fales [2014].

belief that p is justified) is justified.’ He iterates this process several times until he encounters the very complex proposition ‘My belief that (my belief that (my belief that (my belief that p is justified) is justified) is justified) is justified.’ John forms a high credence in this complex proposition. Let’s suppose that, as with Sally’s mother, this is an edge-proposition for John.

These scenarios seem possible, but, if they are, this creates a problem for any content-enhancing belief-first view. Here’s why. John and Sally’s mother cannot form a belief in the proposition that embeds the sentence in an epistemic modal. The proposition is just on the edge of their comprehension, and so the more complicated modal or probabilistic proposition is too complex for them to grasp. Thus, they cannot form the modal belief that corresponds to their credence: the modal proposition is ungraspable.

More generally, recall that p is an edge-proposition for S iff p is on the edge of S ’s comprehension, such that S can grasp p , but, for any proposition more complex than p , S cannot grasp it. Plausibly, S can have a credence in an edge-proposition, since S can grasp it. However, if p is an edge-proposition, S cannot grasp Mp , and thus cannot form the more complex belief Mp . Here is a formalisation of this argument.

- (1) There is an edge-proposition, p : that is, (i) p is graspable for S and (ii) for any proposition more complex than p , S cannot grasp it. [premise]
- (2) S can have a credence in p . [premise, supported by 1]
- (3) Mp is more complex than p . [premise]
- (4) If S cannot grasp Mp , then S cannot believe Mp . [premise]
- (5) Therefore, S cannot believe Mp [1, 3, 4] and S can have a credence in p [2].

The conclusion, (5), entails the denial of the belief-first view. The first conjunct in (5) follows deductively from part (ii) of premise 1, and premises 3 and 4; and the second conjunct in (5) is premise 2, which is supported by (i) of premise 1.

Premise 1 is plausible and finds support in the literature. For example, Robert Audi says, ‘surely, for a finite mind, there will be some point or other at which the relevant proposition cannot be grasped’ [1993: 209]. Michael Bergmann [2005: 432] agrees: ‘before reaching a proposition they are unable to grasp, [agents considering perpetually more complex propositions] will reach one which they can barely grasp.’ The existence of edge-propositions, for possible agents in possible scenarios, is hard to deny.

In defence of premise 2, consider the following argument.

- (2.1) For some edge-proposition p , S can form a belief-attitude in p .
- (2.2). If S can form a belief-attitude in p , S can form a credal-attitude in p .

Premise 2.1 states that there are *some* edge-propositions toward which agents can form belief-attitudes. Note what it is not claiming: it does not entail that agents can form belief-attitudes toward *all* edge-propositions, or that graspability is always sufficient for forming a belief-attitude. There could be (and probably are) conditions other than grasping that are needed for S to form an attitude to a proposition.

But why think that S can form a belief-attitude toward at least one edge-proposition? In virtue of grasping p , S comprehends p . Yes, p is on the edge of S ’s comprehension; nonetheless, S fully understands p ’s meaning. And it’s hard to see why, in at least some case where S understands and grasps a proposition, S couldn’t either believe, withhold,

or disbelieve it. This might have the surprising result that we cannot believe everything entailed by our beliefs. Nonetheless, it's hard to rule out the possibility that there is at least one edge-proposition in which some agent can form a belief-attitude.¹²

In defence of premise 2.2, it is difficult to see why S could have a belief-attitude toward p but cannot have a credence in p . S can form a credence in p in virtue of S's grasping p . Grasping p is often sufficient to form a credence in p , and surely it is at least *possible* to have a credence in a proposition towards which one has a belief-attitude. In other words, this premise states there is a belief-credence parity: if S believes p , then S can have a credence in p .

It follows from 2.1 and 2.2 that there is at least one edge-proposition that S can believe *and* have a credence. Further, note that premise 2 seems plausible even apart from this argument. In our examples, John and Sally's mother grasp the complex proposition and form a moderately high credence in it. Most readers will find stories like these intuitive and unobjectionable.¹³

Premise 3 is also plausible: a proposition embedded in an epistemic modal is more complex than the proposition not embedded. Recall that I've focused on content-enhancing belief-first views: on these views, complexity is added to the content of what is believed. The added complexity of Mp is what captures the fine-grained features that set credences apart from beliefs. This premise is hard to deny, and belief-firsters should accept it by their own lights.

Premise 4 states a necessary condition for having a belief: one believes a proposition only if one can grasp or comprehend the proposition. Audi [1994: 421] states that, in order to believe that p , one must 'have a thought of the relevant proposition p ': p must be able to 'come to one's mind'. In other words, if a proposition is too complex for one to grasp, forming a belief is impossible. If S cannot grasp Mp , Mp cannot come to S's mind in a way that makes it possible for S to believe it.

Note also that this premise is fairly ecumenical regarding various views of the nature of belief. It is consistent with the idea that one can have beliefs (such as dispositional beliefs) that have never been occurrent: for example, you might currently believe that electrons don't wear sneakers, even if you've never explicitly considered that proposition. Premise 4 merely commits us to the idea that, in order to have a belief that p , it must be possible to grasp p . This does not require a past occurrent awareness of p .

Generally, in the case of barely graspable propositions, agents can have credences in them, but cannot form the more complex modal beliefs required for the belief-first view. Further, these cases are easily explained by both credence-first and dualist views. On both views, a credence is a unique attitude that does not reduce to a kind of believing, and, crucially, the numerical or probabilistic component of credences is a part of the attitude, rather than part of the content. Thus, on both views, forming a credence in p does not require grasping a proposition more complex than p . In this, the graspability concerns outlined here are a unique problem for the belief-first view, which relies on complexified content, rather than on a feature of the attitude, to ground the credence.

¹² Thanks to an anonymous referee for encouraging me to expand on this point.

¹³ Thanks to Alan Hájek for helpful discussion about the defense of this premise.

3. Objections and Replies

Premise 1 states that edge-propositions exist. Recall that p is an edge-proposition for S iff p is on the edge of S 's comprehension, such that S can grasp p but, for any proposition more complex than p , S cannot grasp that proposition. One might object to premise 1, arguing that edge-propositions do not exist. There are several reasons why one might deny the existence of edge-propositions. First, one might argue that S can grasp a more complex proposition, using a general strategy for making initially ungraspable propositions graspable, such as the phenomenon of *exemplification* discussed by Catherine Elgin. She argues [2009, 2011] that, in cases where things are quite complex and nuanced, a model or stand-in can exemplify the main points, and so we can grasp them.¹⁴ Similarly, one might argue that there's no sharp cut-off between the graspable and the ungraspable. Rather, as propositions get more complex, graspability just becomes more difficult at each level.¹⁵

There are a few things to say in response. First, arguments like Elgin's raise interesting questions about the bounds of graspability, and are useful for answering questions about where exactly we ought to draw the line between the graspable and the ungraspable. For my argument to work, however, we need not take a stand on where exactly this line is; we just need some boundary (even one that is agent-relative) to exist. Thus, strategies like Elgin's don't raise a problem for my argument, since they don't purport to get rid of the line altogether, but merely suggest that we might have drawn it in the wrong place.

Generally, drawing the line between the graspable and the ungraspable is a difficult task. One reason for this is that there are different ways in which a proposition can be made more complex. And, in some situations, adding significant complexity to a proposition—like a shift in perspective—might make a proposition ungraspable, but adding less complexity—like a negation—might not. The case of Sally's mother, for instance, might not be a perfect example of an edge-proposition, since it does seem like Sally's mother might be able to grasp the sentence if it were negated or modified in some minor way, especially if she took the time to really think through what was said. But adding a shift in perspective, such as 'My daughter is annoyed that he said that she said that she knows that he believes that she is mad at him' might push her 'over the edge'. Identifying what proposition, exactly, is an edge-proposition for Sally's mother isn't essential for our purposes (and this will depend on her cognitive abilities). Where we need to take a stand, however, is that edge-propositions exist, and that there is a definite line between the graspable and the ungraspable, even if it is sometimes difficult to identify.¹⁶

But why think that this line exists at all? This brings me to a second reply. First, it is worth noting that, in order for my argument to create a problem for the belief-first view, all that I need is one case. I need not claim that there is a sharp graspability cut-off in every case, or that there is *always* a strict distinction between being graspable and being ungraspable. It is consistent with my argument that graspability takes different forms in different contexts; I merely need there to be a threshold of graspability in some possible contexts.

And these contexts do seem possible. Many of us have probably had the experience of hearing an edge-proposition and grasping it, and the experience of hearing a more complex proposition (even a slightly more complex one) and being unable to

¹⁴ Thanks to Georgi Gardiner.

¹⁵ Thanks to an anonymous referee.

¹⁶ Thanks to an anonymous referee.

understand its meaning. This supports the idea that such a cut-off exists (even if not in every case). At the very least, insisting such a cut-off is impossible puts the belief-firster in the awkward position of having to take a controversial stance on the nature of graspability—that is, that graspability can never, in any case, be a threshold concept. This is a significant cost to the view, and, as noted above, it is at odds with the way that most people in the literature have understood graspability.¹⁷

Generally, then, it is hard to see what would support the claim that no possible agent can form a credence in an edge-proposition. This seems like a coherent and even common phenomenon: someone states an edge-proposition and you form a degree of confidence in that proposition, even though it is right on the cusp of your comprehension. Without further motivation, we shouldn't rule out the possibility of these cases *a priori*.¹⁸

A second way that one might object to premise 1 is by arguing that, while Mp is more complex than p , Mp simply gives p a certain 'shading' or 'valence'. Maybe one who grasps p can always grasp a proposition slightly more complex than p , as long as the more complex proposition only minimally modifies the initial proposition. Thus, S can grasp slightly more complex propositions like Mp , even though p is on the edge of S's graspability.¹⁹

First, this 'shading' hypothesis is more reasonable in the case of simple modal beliefs like *probably p*, but presumably it's also possible to have *precise* credences in edge-propositions. It is difficult to see how one could grasp *the probability of p is 0.5* in virtue of merely grasping p .

Second, and more importantly, it's hard to see what it means to grasp a proposition with a certain shading or valence. I suspect that agents in these cases aren't actually grasping more complex propositions. In other words, when p is 'shaded' by an epistemic modal and S grasps p , S is not actually forming a belief with the content Mp . Rather, the content of S's attitude is simply p , and the shading is a feature of the *attitude* that S takes toward p . In the same way that a belief that p and a desire that p are phenomenologically different but share content, a belief in p and a credence in p share content but holding each feels different: the attitudes present the same proposition in different lights. Thus, the ability to grasp p with a certain shading or valence doesn't give us reason to think that S is grasping Mp rather than p . The added complexity is in the attitude rather than the content; nothing is grasped other than p .

Recall premise 2.2: if S can believe p , S can have a credence in p . One might object to this premise, arguing that the agents in the pertinent cases can form beliefs but not credences in edge-propositions. One might argue that, in order to form a credence in p , grasping p is not enough; one has to be able to grasp a proposition more complex than

¹⁷ See Audi [1993: 209, 1994: 421], Klein [1999], Bergmann [2005: 432, 2006: ch. 1], and Fales [2014: 349–50].

¹⁸ A related objection appeals to the following possibility: when propositions increase in complexity, this takes the form of a Zeno-like open interval. In this case, each increase in complexity takes you closer to a cut-off, but no finite increase in complexity takes you over the edge. Suppose that you cannot grasp a proposition with complexity level 100, and suppose that you have a set of propositions p_1 – p_n , such that each proposition represents a more complex proposition. p_1 is complexity level 99, p_2 is complexity level 99.5, p_3 is complexity level 99.75, p_4 is complexity level 99.875, etc. If complexity takes this form, a belief-firster can posit a series of increasingly complex propositions but nonetheless maintain that there is a bound of graspability [that is never reached]. This sense of complexity, however, does not seem to describe the kind of complexity added by epistemic modals. Embedding a modal proposition in additional modals doesn't seem to add less complexity with each iteration; it's hard to see why the fifth epistemic modal would add significantly less complexity than the first. (Thanks to Jeremy Strasser and David Builes for raising this objection.)

¹⁹ Thanks to Josh Smart and Mousa Mohammadian.

p. Credence is a more intricate attitude than belief, and thus sometimes grasping a proposition is sufficient to form a belief but not a credence.²⁰

In reply, the idea that there are propositions that we can believe but that we cannot form credences in is odd. The suggestion that it is merely *possible* to believe *p* without having a credence in *p* is controversial. Denying this premise requires not only that this be possible, but that there be cases where one believes *p* yet it is *impossible* for one to form any credence at all in *p* (precise, vague, fuzzy, imprecise, etc.). This reply rules out all credence-first views. Pretheoretically, it seems perfectly possible to form credences in propositions that are graspable but just on the edge of graspability.²¹ Denying premise 2.2 thus does not seem like a promising route.

Premise 4 states that if *S* cannot grasp *Mp* then *S* cannot believe *Mp*. One might object by invoking testimony to establish that one can believe a proposition without grasping it. Suppose that Peter knows that Tim is a remarkably reliable agent, and Tim utters a proposition that Peter cannot grasp. Plausibly, Peter might believe Tim's testimony without grasping the content uttered. Peter might come to believe a proposition on the basis of testimony, even if it is beyond the bounds of his graspability. Thus, one can believe propositions without grasping their content, *contra* premise 4.²²

In reply, it's not plausible that Peter actually believes the proposition that Tim utters. Since Peter does not understand the content uttered, he won't encode the information in the way that beliefs do, and whatever new attitude he has won't play the same functional role as a belief, won't represent the world in the same way, and won't result in the same behavioural dispositions. Thus, on most major theories of belief, Peter simply doesn't believe the content uttered.

Finally, one might object that my argument has counterintuitive implications for the attitude of disbelief. It is commonly thought that disbelieving *p* just is believing *not-p* [Bergmann 2005: 420; Friedman 2013: 166; McCain 2014: 2]. However, it might seem that my view entails that certain edge-propositions can be believed but not disbelieved, since the agent can grasp *p* but cannot grasp *not-p*.²³

There are three replies to this objection. First, one could argue, as does Joshua Smart [forthcoming], that disbelief is not belief. Smart points out that if one considers a proposition *p* and decides it is false, and thus to disbelieve it, surely one has some attitude toward *p* itself, not merely to *not-p*. So, there is independent motivation for thinking that disbelief is a distinct doxastic attitude. I favour this response, but I also acknowledge that it relies on an unorthodox view of disbelief. For those convinced by the orthodoxy, there are two other responses. Second, one could argue that 'not' doesn't add the relevant dimension of complexity that makes edge-propositions ungraspable. One interesting feature of uses of 'not' is that they are collapsible: believing that *not (not-p)* is in some sense equivalent to believing

²⁰ See Holton [2014]. Thanks to Marissa Wallin, Jeremy Strasser, and Josh Smart.

²¹ This seems possible even if, in most cases, it involves or rationally requires withholding belief or having a middling credence, as Bergmann [2005: 432] suggests. He considers the case of an agent considering a proposition just on the cusp of his graspability:

by exerting himself mentally, [he can] barely grasp it, although he also finds himself withholding it because of its complexity. You might think that this is exactly what one should expect to happen to rational people in a reflective mood drawn to continue considering propositions at ever higher levels: before reaching a proposition they are unable to grasp, they will reach one which they can barely grasp and which they will be inclined to withhold because of its complexity.

²² Thanks to Peter Clutton.

²³ Thanks to Zach Barnett and an anonymous referee.

that p . Epistemic modals and probability-beliefs (especially modifiers like ‘it is 0.7 probable that’) add a greater dimension of complexity, and normally are not collapsible (consider the large variety of different modifiers, and thus the different ways that they can affect a proposition’s meaning). Thus, this move is not similarly available to the belief-first view. Third, one could bite the bullet and maintain that we can, in fact, believe some things that we cannot disbelieve.

4. Upshots and Conclusion

The implications of this argument might go beyond the case of credences, since there is an array of views that reduce other mental states to beliefs with complex contents. For instance, some argue that emotions are beliefs (for example, my anger that you ate my cookie is simply the belief that you wronged me by eating my cookie),²⁴ that intentions are beliefs (for example, intending to drink coffee is simply the belief that I will drink coffee),²⁵ and that desires are beliefs (for example, desiring a new car is simply the belief that a new car is good).²⁶ On some of these views, mental states reduce to beliefs with complex content. However, in so far as my arguments are successful against the reduction of credence to belief, they might count against versions of these other reductionist views as well. In the case of barely graspable propositions (and barely graspable contents, more generally), one ought to be able to have an emotion/intention/desire with p as its content, in virtue of merely grasping p , but these views require one to grasp a more complex proposition.

Of course, there are numerous versions of these reductionist views, and many are more nuanced than my examples suggest; I do not claim that this is a problem for all reductionist views. I simply note that my argument might be applicable beyond the case of credence. I leave the details for further research, as my primary goal in this paper is to argue against belief-first views.

I have argued that any content-enhancing belief-first view runs into serious trouble when it comes to edge-propositions. One can form a credence in these propositions, but one cannot believe Mp , because Mp is too complex for one to grasp. I conclude that, however credences differ from beliefs, they do not differ in virtue of adding additional content to the believed proposition.²⁷

Disclosure Statement

No potential conflict of interest was reported by the author.

ORCID

Elizabeth Jackson  <http://orcid.org/0000-0002-6234-4488>

²⁴ See Roberts [1998], Neu [2000], and Nussbaum [2001]. Many Stoics also held this view.

²⁵ See Velleman [2000], Setiya [2007], and Marušić and Schwenkler [2018]. Adam Wodeham, a medieval philosopher, also held this view: see Pickavé [2012].

²⁶ See Price [1989], Hedden [2015: 156–7, 173], and Gregory [2017, forthcoming].

²⁷ Thanks to Paul Blaschko, Katie Steele, Tim L. Williamson, Jeremy Strasser, Joshua Thong, Michael Nielsen, Andrew Moon, and audiences at Australian Catholic University, the 2020 Central APA, and the ANU probability theory reading group for helpful discussion. Thanks to Marissa Wallin, Mousa Mohammadian, Joshua Smart, Alan Hájek, Melissa Fusco, Justin D’Ambrosio, Peter Finocchiaro, Shang Yeo, and two anonymous referees at *Australasian Journal of Philosophy* for comments on earlier drafts. Thanks especially to Peter Tan, as conversations with him sparked the idea for this paper.

References

- Audi, R. 1993. Contemporary Foundationalism, in *The Theory of Knowledge: Classical and Contemporary Readings*, ed. L.P. Pojman, Belmont, CA: Wadsworth: 206–13.
- Audi, R. 1994. Dispositional Beliefs and Dispositions to Believe, *Noûs* 28/4: 419–34.
- Bengson, J. 2015. Grasping the Third Realm, in *Oxford Studies in Epistemology, Vol. 5*, ed. T.S. Gendler and J. Hawthorne, Oxford: Oxford University Press: 1–34.
- Bergmann, M. 2005. Defeaters and Higher-Level Requirements, *The Philosophical Quarterly* 55/220: 419–36.
- Bergmann, M. 2006. *Justification without Awareness: A Defense of Epistemic Externalism*, Oxford: Clarendon Press.
- Bourget, D. 2017. The Role of Consciousness in Grasping and Understanding, *Philosophy and Phenomenological Research* 95/2: 285–318.
- Buchak, L. 2014. Belief, Credence and Norms, *Philosophical Studies* 169/2: 285–311.
- Christensen, D. 2004. *Putting Logic in its Place: Formal Constraints on Rational Belief*, Oxford: Clarendon Press.
- Dogramaci, S. 2018. Rational Credence Through Reasoning, *Philosophers' Imprint* 18: 1–25.
- Easwaran, K. 2015. Formal Epistemology, *Journal of Philosophical Logic* 44/6: 651–62.
- Easwaran, K. 2016. Dr. Truthlove or: How I Learned to Stop Worrying and Love Bayesian Probabilities, *Noûs* 50/4: 816–53.
- Elgin, C.Z. 2009. Exemplification, Idealization, and Scientific Understanding, in *Fictions in Science: Essays on Modeling and Idealization*, ed. M. Suárez, New York: Routledge: 77–90.
- Elgin, C. 2011. Making Manifest: The Role of Exemplification in the Sciences and the Arts, *Principia* 15/3: 399–413.
- Eriksson, L. and A. Hájek. 2007. What Are Degrees of Belief? *Studia Logica* 86/2: 183–213.
- Fales, E. 2014. Turtle Epistemology, *Philosophical Studies* 169/2: 339–54.
- Foley, R. 1993. *Working without a Net: A Study of Egocentric Epistemology*, New York: Oxford University Press.
- Frankish, K. 2009. Partial Belief and Flat-Out Belief, in *Degrees of Belief*, ed. F. Huber and C. Schmidt-Petri, Dordrecht: Springer: 75–96.
- Friedman, J. 2013. Suspended Judgment, *Philosophical Studies* 162/2: 165–81.
- Gregory, A. 2017. Might Desires Be Beliefs About Normative Reasons for Actions? in *The Nature of Desire*, ed. F. Lauria and J.A. Deonna, New York: Oxford University Press: 201–17.
- Gregory, A. forthcoming. *Wanting Is Believing: A Theory of Human Behaviour and its Rationality*. Oxford: Oxford University Press.
- Harman, G. 1986. *Change in View: Principles of Reasoning*, Cambridge, MA: The MIT Press.
- Hawthorne, J. and J. Stanley. 2008. Knowledge and Action, *The Journal of Philosophy* 105/10: 571–90.
- Hedden, B. 2015. *Reasons without Persons: Rationality, Identity, and Time*, Oxford: Oxford University Press.
- Holton, R. 2008. Partial Belief, Partial Intention, *Mind* 117/465: 27–58.
- Holton, R. 2014. Intention as a Model for Belief, in *Rational and Social Agency: Essays on the Philosophy of Michael Bratman*, ed. M. Vargas and G. Yaffe, New York: Oxford University Press: 12–37.
- Horgan, T. 2017. Troubles for Bayesian Formal Epistemology, *Res Philosophica* 94/2: 233–55.
- Jackson, E. 2019. How Belief-Credence Dualism Explains Away Pragmatic Encroachment, *The Philosophical Quarterly*. 69/276: 511–33.
- Jackson, E.G. 2020. The Relationship Between Belief and Credence, *Philosophy Compass* 15/6/e12668: 1–13.
- Kauss, D. 2020. Credence as Doxastic Tendency, *Synthese* 197/10: 4495–518.
- Kaplan, M. 1996. *Decision Theory as Philosophy*, Cambridge: Cambridge University Press.
- Klein, P.D. 1999. Human Knowledge and the Infinite Regress of Reasons, *Philosophical Perspectives* 13: 297–325.
- Lance, M.N. 1995. Subjective Probability and Acceptance, *Philosophical Studies* 77/1: 147–79.
- Lee, M.B. 2017. Credence and Correctness: In Defense of Credal Reductivism, *Philosophical Papers* 46/2: 273–96.
- Marušić, B. and J. Schwenkler. 2018. Intending Is Believing: A Defense of Strong Cognitivism, *Analytic Philosophy* 59/3: 309–40.

- McCain, K. 2014. *Evidentialism and Epistemic Justification*, New York: Routledge.
- Moon, A. 2018. The Nature of Doubt and a New Puzzle About Belief, Doubt, and Confidence, *Synthese* 195/4: 1827–48.
- Moon, A. 2019. A New Puzzle about Belief and Credence, *Canadian Journal of Philosophy* 49/2: 272–91.
- Moon, A. and E. Jackson. 2020. Credence: A Belief-First View, *Canadian Journal of Philosophy* 50/5: 652–69.
- Moss, S. 2018. *Probabilistic Knowledge*, Oxford: Oxford University Press.
- Neu, J. 2000. *A Tear Is an Intellectual Thing: The Meanings of Emotion*, New York: Oxford University Press.
- Nussbaum, M.C. 2001. *Upheavals of Thought: The Intelligence of Emotions*, Cambridge: Cambridge University Press.
- Pettigrew, R. 2015. Accuracy and the Credence-Belief Connection, *Philosopher's Imprint* 15: 1–20.
- Pickavé, M. 2012. Emotion and Cognition in Later Medieval Philosophy: The Case of Adam Wodeham, in *Emotion and Cognitive Life in Medieval and Early Modern Philosophy*, ed. M. Pickavé and L. Shapiro, Oxford: Oxford University Press: 94–115.
- Plantinga, A. 1993. *Warrant: The Current Debate*, New York: Oxford University Press.
- Price, H. 1989. Defending Desire-as-Belief, *Mind* 98/389: 119–27.
- Roberts, R.C. 1998. What an Emotion Is: A Sketch, *The Philosophical Review* 97/2: 183–209.
- Ross, J. and M. Schroeder. 2014. Belief, Credence and Pragmatic Encroachment, *Philosophy and Phenomenological Research* 88/2: 259–88.
- Setiya, K. 2007. *Reasons without Rationalism*, Princeton: Princeton University Press.
- Schiffer, S. 2003. *The Things We Mean*, Oxford: Clarendon Press.
- Smart, J. forthcoming. Disbelief Is a Distinct Doxastic Attitude, *Synthese*.
- Staffel, J. 2013. Can There Be Reasoning with Degrees of Belief? *Synthese*, 190/16: 3535–51.
- Staffel, J. 2017. Accuracy for Believers, *Episteme* 14/1: 39–48.
- Sturgeon, S. 2020. *The Rational Mind*, Oxford: Oxford University Press.
- Velleman, J.D. 2000. *The Possibility of Practical Reason*, Oxford: Clarendon Press.
- Wedgwood, R. 2012. Outright Belief, *Dialectica* 66/3: 309–29.
- Weisberg, J. 2013. Knowledge in Action, *Philosophers' Imprint* 13/22: 1–23.
- Weisberg, J. 2020. Belief in Psyontology, *Philosophers' Imprint* 20/11: 1–27.