

The Revisability View of Belief

G R A C E H E L T O N

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It is widely held that for some mental state to be a belief, it must be, in some sense or other, responsive to evidence (Adler, 2002; Currie & Ravenscroft, 2002; Gendler, 2008; Shah & Velleman, 2005; Velleman, 2000; cf. Bayne & Pacherie, 2005; Bortolotti, 2011).¹ The claim that beliefs are in fact evidence-responsive is distinct from the normative claim that beliefs *ought* to respond to evidence. The descriptive claim says that if some mental state is not evidence-responsive in the appropriate way, it is not a belief, though it may be some other kind of cognitive attitude, such as an entertained thought, a pretense, or a non-doxastic delusion.

Though many theorists endorse the view that beliefs are necessarily evidence-responsive, this claim is rarely argued for.² Instead, it is presented as an obvious conceptual truth or is simply presumed on the way to arguing

¹ Also, the *interpretative view of mind* of the kind associated with Davidson (1984) and Dennett (1989) entails that beliefs are necessarily evidence-responsive in some way, though it is unclear exactly how strong this evidence-responsiveness must be. For a discussion, see Döring (1990).

² A notable exception is found in Shah and Velleman (2005), who suggest that in order to distinguish beliefs from other cognitive attitudes, we must posit that beliefs are necessarily evidence-responsive. For a discussion of this argument, see van Leeuwen (2009).

for other claims (Adler, 2002; Currie & Ravenscroft, 2002; Egan, 2009; Gendler, 2008). The lack of a cogent defense of the view is particularly troubling in light of empirical evidence that many beliefs are formed in response to very poor evidence, or fail to be revised even when contravened by excellent evidence.³ If the view that beliefs are evidence-responsive requires that we exclude all such states from the class of belief, this may count as a reason to reject the view.

In this essay, I develop and defend a particular version of the view that beliefs are necessarily evidence-responsive. This is *the revisability view of belief*, which says that if some mental state is a belief, then that mental state must be nomically capable of being rationally revised in response to any bit of available, sufficiently strong evidence that conflicts with it. Since the revisability view does not require that beliefs be *formed* in response to evidence, but requires merely that existing beliefs can be revised in response to evidence, the view is compatible with evidence that beliefs are frequently formed in response to very poor evidence. The revisability view can also accommodate the fact that beliefs frequently are not revised in response to conflicting evidence. So long as such states have a certain capacity to be revised, they can count as beliefs.

That the revisability view can accommodate irrational beliefs shows merely that the view crosses a hurdle any view of belief must ascend. It does not suggest a positive reason to accept the view. The centerpiece of the paper is such an argument, *the argument from the norm of revision*. This argument moves from a claim about belief's susceptibility to a certain norm

³ For evidence that beliefs are sometimes formed in response to poor or no evidence, see Mandelbaum (2014). For evidence that beliefs are sometimes maintained in the face of conflicting evidence, see Nickerson (1998).

of rationality, to the conclusion that all beliefs are capable of being revised in response to conflicting evidence. The key to this transition is a certain epistemic version of the principle ‘*ought implies can.*’ Painted in the broadest of strokes, the argument is as follows:

- (1) All beliefs are rationally required to be revised in response to conflicting evidence.

- (2) If some mental state is rationally required to be revised in response to conflicting evidence, then that mental state *can* be revised in response to conflicting evidence.

- (3) All beliefs can be revised in response to conflicting evidence.

In §1, I develop the revisability view of belief. In §2, I present the main argument in favor of the revisability view. In §3, I consider what predictions the revisability view makes of particular mental states, including faith-based religious views. In §4, I conclude.

0 Introduction

Before proceeding to my main arguments, I want to say something about the way I am conceiving of beliefs, and the method I am using to investigate them. I am presuming that if beliefs exist at all, they exist whether or not humans recognize them or regard them as existing. Beliefs are in this respect like atoms of calcium, Joshua trees, and wind currents. They are entities we must posit to explain some interesting range of empirical phenomena. Beliefs differ in this respect from both money and the Canadian province of Saskatchewan, which plausibly exist in virtue of

something like implicit consent and authoritative decree, respectively. The metaphysical presumption that beliefs exist independently of human responses immediately rules out that we might merely decide or stipulate what beliefs are.

My strategy of isolating beliefs is primarily one of provisional reliance on a cluster of core claims typically associated with beliefs. On this strategy, both philosophical and ‘folk’ platitudes about beliefs can be useful in the initial stages of theorizing, but these platitudes should be treated as revisable in light of disconfirming evidence. There are other cases in which a cluster concept can help one pick out some entity even when the relevant cluster of features turns out not to obtain in that entity. For instance, in some contexts, the cluster concept *the man drinking champagne in the corner* can help one identify what is really a woman drinking vodka in the corner. Likewise, the typical cluster of claims associated with beliefs—that they are action-guiding, inferentially promiscuous, rationally coherent, like *that*, and so on—might turn out to be useful in picking out beliefs, and thus in ultimately discovering the nature of beliefs, even if the total cluster of claims should turn out not to hold of beliefs.⁴

One reason I treat platitudes about beliefs as provisional is that I take it to be a near-datum that we have beliefs. Thus, I am presuming that *eliminativism about beliefs*, on which humans do not enjoy beliefs at all, is a highly implausible view, one which is more implausible than at least some radically revisionist views about the nature of belief. This means that there are at least some cases in which, given the choice between doing without belief in our theorizing about human psychology, or adopting a highly revisionist theory of belief, we should embrace revisionism. For instance, if

⁴ This general approach owes much to Mandelbaum (2014).

it should turn out that we have been massively misled about the relation between belief and action, such that belief never guides action in the appropriate way, it may be that we should reject the view that beliefs are constitutively action-guiding, instead of concluding that humans do not enjoy beliefs.

Finally, a locutional note: I am using ‘belief’ to pick out a very broad range of states, including occurrent, merely dispositional, endorsed, and non-endorsed states. Thus, my ‘belief’ includes what are sometimes called *judgments*, where these are occurrent states that are not necessarily reflectively endorsed. ‘Belief’ further picks out both states that are produced by an automatic, non-conscious, fast, and heuristic process and states that are produced by an effortful, conscious, and analytic process. This liberal usage of ‘belief’ reflects the ambitions of the current project, which aims to identify what all such states have in common.

1 The Revisability View of Belief

In this section, I lay out my positive proposal, the revisability view of belief. On this view, in order for some mental state to count as a belief, it must have a certain capacity to be revised in response to conflicting evidence:

THE REVISABILITY VIEW OF BELIEF: if some mental state is a belief, then it is nomically capable of being rationally revised in response to any piece of available, sufficiently strong evidence that conflicts with it.

Put slightly more formally, the revisability view says: for all x such that x is a belief, and for all y such that y is some piece of available,

sufficiently strong evidence that conflicts with x : x is nomically capable of being rationally revised in response to y .

The revisability view is a descriptive claim, not a normative claim. It is not a claim about how beliefs ought to be; it's a claim about how beliefs must be insofar as they are beliefs. The revisability view says that if some state is not nomically capable of being rationally revised in response to any bit of available, sufficiently strong evidence that conflicts with it, it is not a belief, though it may be one of the other *cognitive attitudes*, such as an entertained thought, an assumption, or a pretense.⁵ Cognitive attitudes treat some state of affairs as obtaining, and in this way contrast with *conative attitudes*, such as wishes and desires, which treat some state of affairs as to be obtained (Shah & Velleman, 2005; Velleman, 2000).

Before proceeding to the major components of the revisability view, there are three aspects of the view worth highlighting at the outset: first, the capacity to be revised in response to *any* piece of evidence does not entail a capacity to be revised *simultaneously* in response to all pieces of evidence. It may be that some belief can be revised in response to evidence that p and can be revised in response to some other piece of evidence that *not-p* even though that belief cannot be revised simultaneously in response to both pieces of evidence. This restriction is consonant with how we think of other capacities: that Janelle can swim a mile and can play the *Rhapsody in Blue* clarinet solo does not suggest that Janelle can swim a mile *while* playing the *Rhapsody* solo. Second, the relevant capacity to be revised is not to do with how a state is *formed*; it is strictly to do with how an existing state responds to evidence. Hence, states which are formed in response to good evidence

⁵ Throughout, all references to revision should be understood to be references to *rational* revision, unless stated otherwise.

but which subsequently lack the capacity to be revised are not revisable in the relevant sense.

Third, whether some mental state is revisable depends on whether that state can be revised in response to conflicting evidence. This raises the question of what the view says about mental states that are *never* contravened by evidence. Perhaps those mental states that represent obvious necessary truths, such as the judgment *it's not the case that p and not-p*, are never contravened by evidence. Or, if God is all-knowing, then perhaps God's mental states are never contravened by evidence. If there are mental states that are never contravened by evidence, these states trivially satisfy the requirement of revisability in virtue of never failing to be revised in response to conflicting evidence. For this reason, the revisability view permits such states into the class of belief.

On the revisability view, beliefs must be (i) nomically capable of being (ii) rationally revised in response to (iii) available, conflicting evidence. I will discuss each of these components in turn. In the sense that is relevant to the revisability view, some mental state is *nomically capable* of being revised just in case, in at least some worlds where the relevant subject's psychological mechanisms are held fixed, that mental state is revised.⁶ For mental states occurring in typical humans, the relevant worlds are those in which mechanisms of human psychology are held fixed. For mental states occurring in typical octopuses or machines or extra-

⁶ This method of analyzing capability is loosely based on Lehrer (1976).

terrestrials, the relevant worlds are those in which the typical mechanisms of octopus or machine or extra-terrestrial psychology are held fixed.⁷

Further, whether some mental state is revisable depends on whether that mental state can be revised in the very subject in whom it occurs. A mental state thus can't count as capable of being revised in virtue of the fact that it would be revised if it were to occur in a different subject.⁸

While the revisability view requires that beliefs be capable of being revised in response to conflicting evidence, the view is silent about the nature of the processes that mediate this revision and relatedly, about whether subjects are aware of or voluntarily bring about this revision. It is thus consistent with the revisability view that belief revision should

⁷ Arguably, subjects can survive changes in the kind of creature they are. There is an issue of how to characterize revisability in light of this fact. It's at least conceivable that a goldfish might be turned into an orangutan and manage to persist as the very same creature that it was before its transformation (it won't be the same *species*, but it might be the very same creature). If this possibility is a genuine one, then we need to further restrict the range of worlds that are relevant to revisability. Otherwise, a mental state held by a goldfish might count as revisable in virtue of the fact that it would be revised, were that goldfish transformed into an orangutan. This result would make the revisability view too weak to be of much interest. We can guard against this outcome by restricting the range of relevant possible worlds to those in which the relevant subject persists as *the very same kind of creature* that she is in the actual world.

⁸ On some views of the persistence conditions of mental states, it is not possible for the very same mental token to occur in two different subjects, even at different times. On such views, the proposed limitation on revisability will be harmlessly redundant.

generally occur non-voluntarily, non-inferentially, or outside of the subject's awareness.

The second component of the revisability view is that beliefs must be capable of being *rationally revised* in response to conflicting evidence. Some mental state is rationally revised in the relevant sense only if that mental state is revised: (i) in response to evidence, (ii) in the right direction, (iii) and via a non-deviant route. I will briefly sketch each of these conditions in turn.

First, for some mental state to be rationally revised, it must be revised in response to evidence. If you judge that today is Wednesday and then, as the result of an unfortunate encounter with lightning, lose this judgment, your judgment has been revised, but not in response to evidence. This route to revision is thus non-rational.

Second, for some mental state to be rationally revised, it must be revised *in the right direction*. Which direction is the right direction is dictated by the evidence. For instance, if the best evidence suggests that not- p , then for a mental state as of p to be rationally revised, it must

decrease in strength, disappear altogether, or be suspended.⁹ If this state should increase in strength, it is not rationally revised.¹⁰

Finally, for some mental state to be rationally revised, it must be revised via a non-deviant route. The task of distinguishing deviant from non-deviant routes to revision is a very large one. Indeed, it is one of the primary projects of contemporary epistemology. For our purposes, it is sufficient to distinguish deviant from non-deviant routes ostensively, by a pair of contrastive cases.

First, consider a case in which you believe that extra-terrestrials do not exist. You then read in a reliable newspaper that the government has captured one. On the basis of the report, you relinquish your belief that extra-terrestrials do not exist. This is a non-deviant path to revision. Compare this case to one in which you read in the newspaper that the government has captured an extra-terrestrial, and the shock causes you to

⁹ I mention belief suspension separately since it might constitute a *sui generis* kind (Friedman, 2013).

¹⁰ One way a mental state can count as revisable is by decreasing in strength in response to conflicting evidence. In order for some mental state to decrease in strength without disappearing altogether, it must permit of degrees of strength. Not all revisable states will permit of degrees but we might think of those that do as permitting of degrees that can range from 0 up to and including 1 on the real numbers. Where these mental states are beliefs, these degrees are called *credences* and might be helpfully construed as a measure of subjective confidence (Strevens, 2012). I am supposing that there cannot be states which represent to degree 0 that p . When a belief actually reaches (as opposed to merely approaches) a credence of 0 , it ceases to exist.

fall out of your chair and bang your head. By sheer coincidence, the blow obliterates your belief that extra-terrestrials do not exist. In this case, your belief is revised in response to evidence, but the route to revision is deviant and hence, the revision does not count as a rational revision.

The final component of the revisability view is that beliefs must be capable of being revised in response to *available, sufficiently strong conflicting evidence*. If evidence is construed as states of affairs, then for those states to count as *available* for a subject, that subject must be aware of those states of affairs. Further, the mode or presentation under which the subject represents these states of affairs (if any) must be the same mode of presentation (if any) under which the relevant belief is described.

Here and throughout, the relevant notion of evidence is meant to be neutral between external and internal individuations of evidence. On some internalist conceptions of evidence, evidence necessarily consists of consciously accessible mental states. On such conceptions, the requirement that conflicting evidence be available is harmlessly redundant. On externalist conceptions of evidence, evidence is at least partly comprised of states of affairs (Kelly, 2008). On such conceptions, the requirement that evidence be available is a substantive requirement.¹¹

Evidence is *sufficiently strong* in the relevant sense just in case it is strong enough to trigger a rational requirement that the relevant belief be revised. The motivation for characterizing sufficient strength in this way derives from the argument in favor of the revisability view.

¹¹ Going forward, I sometimes abbreviate ‘sufficiently strong, available conflicting evidence’ with ‘sufficiently strong conflicting evidence’ or just ‘conflicting evidence.’

Finally, *conflicting evidence* comes in two basic varieties. For a belief that p , conflicting evidence can be evidence in favor of some proposition q , where q is inconsistent with p .¹² Or, it can be evidence that undermines p itself. For instance, suppose a subject believes, on the basis of a visual experience as of a bison, that there is a bison in the distance. Reliable testimony that there are no bison in the area would count as evidence that conflicts with this belief, since it is evidence in favor of a proposition that is inconsistent with the proposition believed. Evidence that one's visual system is dramatically malfunctioning would also count as evidence that conflicts with the relevant belief, but for a different reason: it undermines the evidence which was the basis for that belief.

1.1 *The Revisability View and Masks*

The revisability view ascribes to beliefs a certain capacity, and capacities can be *masked*. For instance, if some glass is capable of breaking, then in at least some possible worlds, it does break. This is consistent with the fact that in many worlds, the glass won't break, even if struck with force. Even a very fragile glass won't break when struck if it is wrapped in soft, thick padding. But this does not mean that the padding renders the

¹² Two mental states are *inconsistent* in the relevant sense just in case the propositions they each represent cannot simultaneously obtain. The relevant kind of conflict is thus that of logical conflict. Pairs of mental states whose contents are transparently contradictions of each other ('Austria is in the E.U.' and 'Austria is not in the E.U.') will count as inconsistent, as will pairs of mental states whose contents conflict in a less transparent way ('Clark Kent cannot fly' and 'Superman can fly').

glass no longer capable of breaking. The padding merely obscures the glass' capacity to break (Bird, 1998; Johnston, 1992).¹³

For at some beliefs in humans, the conditions which tend to facilitate rational belief revision are those in which the belief and the evidence which contravenes it are both attended, and the belief is not underpinned by strong emotion. Correspondingly, for such beliefs, typical masks of the capacity to be revised will include conditions in which the belief is not underpinned by strong emotion and the belief is not attended.

There are two reasons we should not take the preceding list of masks to exhaust possible masks of revisability. First, though these conditions describe some beliefs held by humans, it may be that there are other beliefs held by humans which are revised under rather different conditions than those described and hence, whose masking conditions are different than those described.

A second reason to take the list of masks as non-exhaustive is that the revisability view is not restricted to beliefs in humans; it extends to all beliefs, both actual and merely possible, whether those beliefs occur in non-human animals, artificially intelligent beings, or extra-terrestrials. It is at least conceptually possible that some of these creatures' beliefs are masked by very different conditions than those which mask ordinary beliefs in humans. For instance, while being underpinned by strong emotion may prevent belief revision in humans, it is at least conceptually possible that there exist creatures for whom being underpinned by strong emotion is nomically necessary for belief revision.

1.2 The Revisability View and other Views of Belief

¹³ This characterization of masks borrows from the dispositions literature, which is the context in which Bird and Johnston discuss masks.

Since the revisability view posits merely a necessary and not a sufficient condition on belief, it is not a full characterization of belief. As it turns out, revisability is probably not sufficient for belief. One reason for thinking this is that it may be that for a mental state to count as a belief, that mental state must play some motivational or action-guiding role for its subject. On this view, if a subject believes tomatoes are vegetables, she must be disposed to say and do certain things, like assert that tomatoes are vegetables, place her tomatoes in the crisper drawer she reserves for vegetables, or increase her consumption of tomatoes as part of an attempt to increase her vegetable intake.

Another reason for thinking that revisability is not sufficient for belief is that it may be that all beliefs, insofar as they are beliefs, must play characteristic phenomenal roles. For instance, it may be that the belief that there is beer in the fridge must dispose one to experience surprise when opening the fridge and finding no beer in it (Schwitzgebel, 2002).

A final reason for thinking that revisability is not sufficient for belief is that it may be that in order for some mental state to count as a belief, that mental state must be *inferentially promiscuous*, or available as a premise across a wide range of inferences (Glüer & Wikforss, 2013; Mandelbaum, 2014). On this view, if one believes there is beer in the fridge, then one must be able to exploit this belief as a premise in further inferences. For instance, the belief that there is beer in the fridge might satisfy this requirement by contributing to inferences such as: *There is beer in the fridge. If there is beer in the fridge, I don't need to buy more beer. So, I don't need to buy more beer.*

Notably, the revisability view is consistent with all of these proposed additional requirements on belief. For while the revisability view posits that

revisability is necessary for belief, it does not further stipulate that this is the only necessary condition on belief.

Finally, the revisability view should be distinguished from the view that belief aims at truth.¹⁴ These views come apart in both directions. One might hold that beliefs are necessarily capable of being revised in response to conflicting evidence and simultaneously deny that belief aims at truth. For instance, one might maintain that what accounts for the fact that beliefs are capable of being revised is not that beliefs aim at truth but that belief (or perhaps the organism as a whole) aims at some other outcome, such as internal consistency or holding views that are close enough to the truth for practicable action. Conversely, one might endorse the view that belief aims at truth while denying that all beliefs have a capacity to be revised in response to evidence. On this view, beliefs that entirely lack a capacity to be revised in response to evidence might be viewed as highly deviant beliefs, but they will nevertheless have truth as an aim; such states will merely be ill-equipped to achieve this aim.

In this section, I have sketched the major tenets of the revisability view of belief. On the revisability view, all beliefs, insofar as they are beliefs, are nomically capable of being rationally revised in response to evidence that conflicts with them. If there are mental states which are never contravened by evidence, such as those which represent evident necessary truths, these mental states trivially satisfy the condition of revisability and hence, can count as beliefs. States which altogether lack the nomic capacity to be revised are not beliefs, though they may be some other cognitive

¹⁴ For defenses of the view that belief has truth as an aim, see Shah and Velleman (2005) and Wedgwood (2002). For a defense of the view that belief's aim (if any) is knowledge, see McHugh (2011).

attitude, such as a merely entertained thought, an assumption, or a cognitive pretense. In the next section, I turn to the argument in favor of the revisability view.

2 The Argument from the Norm of Revision

In this section, I present a positive argument in favor of the revisability view, *the argument from the norm of revision*. This argument extends in full generality to all doxastic states, whether occurrent or dispositional, attended or unattended, unconsidered or reflectively endorsed, conscious or non-conscious, compartmentalized from other states or integrated with other states, heuristically-produced or inferentially-produced.

The argument is named after its central premise, which states, roughly, that beliefs are rationally required to be revised in response to any bit of available, sufficiently strong evidence that contravenes them. Since this claim is normative, it cannot not by itself illuminate the descriptive nature of belief. But combining this claim with an epistemic version of the principle *'ought' implies 'can'* yields a surprisingly powerful argument in favor of the revisability view. Here is the argument in full. Throughout, m is an arbitrarily selected mental state m , and S is the subject in whom m occurs:

- (1) If S 's belief m is contravened by available, sufficiently strong evidence, then S has a pro tanto obligation to rationally revise m in response to that evidence.

- (2) If S is pro tanto obligated to revise m in response to available, sufficiently strong evidence that contravenes it, then S is nomically

capable of rationally revising m in response to that evidence.

(3) If S is nomically capable of revising m in response to available, sufficiently strong evidence that contravenes it, then m is nomically capable of being rationally revised in response to that evidence.

(4) If S 's belief m is contravened by available, sufficiently strong evidence, then m is nomically capable of being revised in response to that evidence. i.e., the revisability view of belief is true.

The heavy lifters in the argument are the first two premises: (1) is the norm of revision, and (2) is an epistemic version of '*ought*' implies '*can*.' As we shall see, (3) is a truism or a near-truism. I turn now to defending the argument, focusing attention on the first two premises.

2.1 *The Norm of Revision*

The first premise of the argument just is the norm of revision. It says that subjects who enjoy beliefs that are contravened by available, sufficiently strong evidence have a *pro tanto obligation* to rationally revise that belief in response to that evidence. Here as before, a belief is *rationally* revised only if it shifts in the right direction in response to evidence and via a non-deviant route.

Pro tanto obligations are obligations that retain their force even when trumped by more pressing obligations (Scanlon, 1998, p. 50). In this way, they contrast with all-things-considered obligations. The following case is illustrative: you have promised to attend your friend's viola performance. He is performing one solo at the beginning of a longer concert. On the way to the show, you encounter a badly injured child who

needs medical attention. If you stop and help the child, you will certainly miss your friend's performance. In this case, you are *pro tanto* morally required to keep your promise to your friend, at the same time that you have a more pressing moral requirement to ensure that the child receives medical care. Thus, your all-things-considered obligation is to assist the child, but this does not change the fact that you have a *pro tanto* requirement to attend your friend's concert. That requirement is simply trumped by another more pressing obligation.

The distinction between *pro tanto* and all-things-considered requirements also obtains in the epistemic domain. The reason the norm of revision is articulated in terms of a *pro tanto* and not an all-things-considered requirement is that the subject whose belief is contravened by evidence may also have other evidence which supports a different all-things-considered epistemic obligation. For instance, if one believes, on the basis of a visual experience, that there is a bison in the distance, and one also has very good evidence that one's visual system is malfunctioning and more particularly is causing visual bison hallucinations, one is at least *pro tanto* rationally required to revise one's belief. However, if one also has evidence in the form of reliable testimony that there is in fact a bison in the distance, it may be that one's all-things-considered epistemic obligation is to maintain one's belief. Nevertheless, the *pro tanto* requirement to revise the belief does not disappear in light of the more pressing epistemic obligation; it is simply trumped such that it is not, all-things-considered, what one ought to do.

It remains to argue for the norm of revision. I am taking (1) to reflect an intuitive, core feature of belief but much more importantly, to at least partly explain why it matters whether some state is a belief or not. Thus to

reject (1) would be to both dissociate belief from norms of rationality in a peculiar way and, what's worse, to deprive the category of belief of its particular theoretical interest.

Consider that to reject (1) would be to accept that there exists some belief, held by some subject *S*, such that: *S* has available, sufficiently strong evidence that contravenes that belief, and yet *S* is not so much as pro tanto rationally required to revise that belief. Certainly, we can describe a case that satisfies these conditions, but that doesn't suggest that such a description reflects a genuine and not merely an epistemic possibility. For any such proposed case, one might reasonably doubt whether such a state is a belief and not merely an entertained thought, a pretense, an assumption, or some other attitude altogether.

In favor of the norm of revision is that it captures our pre-theoretic intuitions about a range of cases. If you believe there is fruit on your kitchen table and then, walking into the kitchen, see that the fruit bowl is empty, you should revise your belief. If you believe your child did not shoplift from a local convenience store and subsequently view surveillance footage showing your child doing just that, you should revise your belief. If you believe God exists and subsequently come to believe that the suffering that exists in the world is inconsistent with the existence of God, you should revise your belief.

In all these cases, the relevant obligation is an obligation of rationality. In some of these cases, obligations of morality or of prudence may recommend different courses of action. For instance, it may be that morality requires that you believe your child when she says that she did not shoplift, even though the surveillance footage says otherwise. The presence of such an overriding moral obligation, however, would not make it the case

that you lose the pro tanto rational obligation to revise your belief; the moral obligation merely trumps it.

Importantly, the norm of revision extends to beliefs that are unattended, formed on the basis of perception, or non-conscious. Insofar as these states are beliefs, they ought to be rationally revised in response to sufficiently strong, available evidence that contravenes them. If you believe that the Bowery runs from east to west, and then come to examine a map of Manhattan, paying special attention to the Lower East Side, you should revise your belief. If you judge, on the basis of a perceptual experience, that two lines in a figure you are viewing are of different lengths, and then come to learn that the figure is illusory, you should revise your belief. If you believe implicitly, as the undetected effect of watching too many commercials, that drinking fruit juice is healthy, and then come to read about the ill effects of fruit juice on insulin response, you should revise your belief.

A final observation about (1) before moving to (2): the connection to norms of rationality is distinctive of belief, in that there are at least many other attitudes which do not exhibit it. For instance, suppose that some subject merely entertains the thought that she is the ruler of Sweden, perhaps to amuse herself during a particularly dry philosophy talk. Suppose also that she has excellent evidence that she is not the ruler of Sweden. There is no *rational* requirement that this subject revise her entertained thought. There may be other reasons, such as prudential reasons, for her to abandon the entertained thought, but rationally speaking, there is nothing amiss about it.

It would appear then, that the fact that beliefs are susceptible to the norm of revision suggests something special about the nature of belief. The

tantalizing hope is that we might exploit belief's susceptibility to this norm to learn something substantial about belief's nature, something that distinguishes it from at least some other attitudes. By combining (1) with an epistemic version of '*ought*' implies '*can*', we can do just that.

2.2 Epistemic '*Ought*' Implies '*Can*'

I now turn to (2): if *S* is pro tanto rationally required to revise *m* in response to available, sufficiently strong contravening evidence, then *S* is nomically capable of rationally revising *m* in response to that evidence. (2) is an epistemic version of '*ought*' implies '*can*.' It says that if a subject ought to revise a belief, then she can revise that belief, in some sense of '*can*.' As we shall see shortly, the relevant sense of '*can*' is relatively weak, in that it does not require that the subject can voluntarily bring about the relevant revision.

The primary support for (2) is that it falls out of a more general claim about what agents can be rationally required to do, given their psychological limitations. In general, agents who are cognitively incapable of bringing about some state of affairs cannot be rationally required to bring about that state of affairs, even when their more cognitively capable counterparts might be so required. For instance, a typical two-month old human infant cannot be rationally required to discriminate between an inaccurate depiction of the human body and an accurate depiction of the human body; in certain circumstances, typical adults might be so obligated.¹⁵ Likewise, someone who reads English but not Mandarin cannot be rationally required to notice a glaring contradiction between a Mandarin

¹⁵ Two-month-old infants cannot discriminate accurate from 'scrambled' depictions of the human body (Slaughter et al., 2011, pp. 87-91).

text and its English translation; in certain circumstances, someone who reads both languages fluently might be so required.

The question arises: why aren't infants rationally required to appreciate inaccuracies in depictions of the human body, when their adult counterparts might be so required? And why aren't non-readers of Mandarin rationally required to make assessments on the basis of Mandarin-encoded information, when their Mandarin-fluent counter-parts might be so required? If we accept (2), and accept that rational requirements entail a corresponding psychological capacity, then we enjoy a straightforward and elegant answer to these questions: it is because rational requirements entail a correlative psychological capacity that infants can't be rationally required to recognize inaccuracies in the depiction of the human body and that non-readers of Mandarin cannot be rationally required to appreciate a glaring problem in a Mandarin text. Psychological capacity serves as a limit on rational requirement. Anyone who rejects this view must offer some explanation of why we don't hold infants to the same rational standards as adults and why we don't rationally require adults to incorporate information they lack the capacity to understand.

In the contemporary literature, epistemic versions of '*ought*' implies '*can*' have been widely discussed, but it is important to note that these disputes are for the most part orthogonal to whether we ought to accept the '*ought*' implies '*can*' of (2).¹⁶ This is because the contemporary literature on epistemic versions of '*ought*' implies '*can*' is primarily concerned with versions of the principle that entail a voluntary capacity to revise one's

¹⁶ See Mizrahi (2012) and Ryan (2003) for recent criticisms of epistemic '*ought*' implies '*can*.' For recent defenses, see Hattiangadi (2010), Littlejohn (2012), and Vranas (2010).

beliefs. In contrast, (2) is neutral on whether the relevant subject can voluntarily bring about the relevant revision. Since our ultimate concern is not with the nature of the agent's capacity to revise her belief, but is rather with the revisability of the belief itself, it is sufficient for our purposes that the relevant belief revision be appropriately causally related to the agent or some of the agent's states, whether or not that causal relation is the product of voluntary action.¹⁷

Since the kind of capacity relevant to (2) does not require a capacity for voluntary action, the '*ought*' implies '*can*' of (2) survives counterexamples which threaten stronger versions of '*ought*' implies '*can*.' For instance, consider the following case from Sharon Ryan, designed to refute one such stronger variant of '*ought*' implies '*can*':

STICKY FINGERS

Your kleptomaniac friend, Sticky Fingers, has been accused of stealing your most prized possession. You are fond of Sticky Fingers and trust her completely. You believe she is innocent of the crime. After an investigation by the police, you are presented with conclusive evidence that Sticky Fingers committed the theft, but your belief in her innocence does not waver. You are simply psychologically incapable of voluntarily revising or relinquishing your belief in your friend's innocence. Nevertheless, so far as

¹⁷ For recent criticisms of belief's voluntariness, see Hieronymi (2006) and Ryan (2003). For a recent defense, see Steup (2008).

rationality is concerned, you ought to give up this belief (Ryan, 2003, p. 59).¹⁸

It may be that STICKY FINGERS succeeds as a counter-example to versions of ‘*ought*’ implies ‘*can*’ that require that beliefs can be revised voluntarily. However, STICKY FINGERS does not rebut the version of ‘*ought*’ implies ‘*can*’ outlined in (2) since this version does not require a voluntary capacity for revision.

Moreover, if the case were modified in such a way that would render it a threat to (2), we would no longer enjoy the intuition that you are rationally required to revise your view of Sticky Finger’s innocence. Consider what such a case would involve: your view in your friend’s innocence would have to be such that, holding fixed your psychological mechanisms, there is *no* possible world in which your view in your friend’s innocence is rationally revised. Even if your warm feelings towards your friend were to disappear entirely, such that you no longer held her in any particular esteem, your view of her innocence would still not be revised in response to the evidence. Even if you were to spend years considering the evidence against your friend, your view would still not be revised.

It seems to me that in this case, in which your view of your friend’s innocence is genuinely nomically incapable of being rationally revised, it is obscure in what sense you might be rationally required to revise your view. Perhaps it would be rationally *better* if you were to revise your view, but

¹⁸ This case is slightly modified from Ryan’s so that it concerns already existing beliefs. Also, though Ryan’s initial description of the case does not explicitly state that it is a voluntary capacity to revise one’s beliefs that is relevant, the subsequent discussion of the passage makes explicit that it is a voluntary capacity that is at stake.

some outcome can be rationally better without being rationally required. Consider an analogy from the moral domain: the world would be a better place if you were to leap a mile-long chasm to rescue an imperiled child. However, you are not morally required to bring about this event. You simply can't leap a mile-long chasm, so you are not so obligated. Likewise, if your view of your friend's innocence can't be revised, you cannot be required to revise it.

2.3 *The Argument Completed*

The final premise in the argument is (3), which, to simplify somewhat, states: *If S is capable of revising m, m is revisable*. I am taking (3) to be a kind of truism. If someone is capable of driving *that* car, that car is capable of being driven. If someone can cook *that* eggplant, that eggplant is capable of being cooked. For any particular, if someone can perform some action on that particular, then that particular is capable of having that action performed on it. Token beliefs fall under this general schema. If some subject is capable of bringing about a revision of some particular belief, then that particular belief is capable of being revised.

Finally, (4) is the conclusion, and states that for any arbitrarily selected belief, that belief is nomically capable of being rationally revised in response to available, sufficiently strong evidence that contravenes it. In other words, the revisability view of belief is true.

What exactly does this argument show? As it turns out, it tells us something quite surprising and informative about the nature of belief. Not only are beliefs capable of being revised in some bare metaphysical sense—even states very different from belief, like desires, emotions, and pretense might exhibit a capacity as weak as that—all beliefs, insofar as they *are*

beliefs, are such that in at least some nomically possible worlds where they are contravened by evidence, they are revised.

I take the argument developed in this section to suggest a strong reason for positing that beliefs are necessarily nomically capable of being rationally revised. In effect, the argument says that any opponent of the revisability view must pay a cost: on the one hand, she might give up on the norm of revision, which would be to dissociate belief from rational requirement in a surprising way and in a way that would deprive belief of its theoretical interest. On the other hand, she might give up the view that a rational requirement entails a nomic capacity to be revised. But this would deprive her of a straightforward explanation of why subjects who lack a nomic capacity to bring about some state of affairs cannot be rationally required to bring about that state of affairs.

In the next section, I consider what predictions the revisability view makes of particular cases. I argue that mental states that are sustained by confirmation bias can count as beliefs, but that faith-based religious views and similar states cannot. I further argue that the exclusion of faith-based religious views and similar states from the class of belief—though initially counter-intuitive—is ultimately a desirable result.

3 The Predictions of the Revisability View

Many beliefs held by actual humans are irrational. In developing a descriptive theory of belief, it is important to allow for this fact. If we don't, we risk ending up with a theory of good belief, where what we wanted was a theory of belief (Huddleston, 2012). In this section, I show that the revisability view is not at risk of ending up a theory of good belief. It permits at least some irrational states into the class of belief, including at

least some states which are the result of confirmation bias and at least some states which are emotionally underpinned.

3.1 States Permitted into the Class of Belief

The phenomenon of confirmation bias occurs when subjects ignore or disvalue evidence which conflicts with their existing views and attend to or overvalue evidence which supports their existing views. Confirmation bias is widespread in human reasoning; it has been observed in the context of paranormal beliefs, political beliefs, racist beliefs, and the pessimistic beliefs that are associated with certain anxiety disorders (Nickerson, 1998).

In a representative paradigm investigating confirmation bias, subjects were asked to indicate on a pre-defined scale the degree to which they were in favor of or against *neuro-enhancement*, or the non-palliative use of medicine for the purpose of improving cognitive, artistic, or athletic abilities. They were then given brief descriptions of eight different arguments, four of which were in favor of neuro-enhancement, and four of which were against it, and were asked to choose one of the eight arguments to read. Subjects who had self-rated as in favor of neuro-enhancement tended to select an argument in favor of neuro-enhancement. Subjects who had self-rated as against neuro-enhancement tended to select an argument against neuro-enhancement. Thus, subjects avoided evidence that might challenge their pre-existing views. After reading their chosen argument, the subjects exhibited very little shift in their views (Schwind et al., 2012).

Arguably, mental states which persist due to confirmation bias are irrational. At least, the strategy which sustains them is at odds with the widespread assumption in philosophy of science that the best way to test a theory is to try to falsify it. Nevertheless, the revisability view can count at least some mental states that are sustained by confirmation bias as beliefs.

The revisability view says that all beliefs must be nomically capable of being revised in response to evidence. And, as it turns out, at least some mental states which are sustained by confirmation bias are capable of being so revised. For instance, in a variant of the study of subjects' views of neuro-enhancement, subjects were encouraged to read an argument that was *inconsistent* with their reported view. This simple intervention resulted in subjects' moderating their initial views of neuro-enhancement (Schwind, et al., 2012). This demonstrates that in at least some cases, confirmation bias can be remediated simply by drawing subjects' attention to potentially disconfirming evidence; these states are thus nomically capable of being rationally revised.

Another class of beliefs which tend to resist evidence are emotionally underpinned beliefs. For instance, suppose that your child is accused of shoplifting cigarettes from a local convenience store. Suppose further that you enjoy evidence that your child in fact stole the cigarettes but that you nevertheless maintain her innocence. The question is: are you capable of rationally revising your view in response to the evidence? This depends on the particulars of the case.

There are practical and ethical problems in directly testing whether particular emotionally underpinned states would be revised if dissociated from emotion. Thus, it is difficult to say, of any particular emotionally supported state, whether that state is revisable. Nevertheless, there is indirect evidence that at least some such states—perhaps including your view that your child did not steal the cigarettes—would be revised if divorced from feeling or if contravened by very strong evidence.

A primary mechanism of belief revision in humans involves *cognitive dissonance*, which is a kind of discomfort triggered when a

subject experiences her views as in conflict. When subjects experience dissonance, they tend to revise one of their conflicting views in the direction of coherence with the other view. The dissonance itself—the feeling of discomfort—plays an essential role in this process (Harmon-Jones & Harmon-Jones, 2007; Elliot & Devine, 1994). This suggests that the catalyst of belief revision is the motivation to reduce dissonance. When the challenged belief *itself* is such that, giving it up would cause emotional distress, it may be preferable for a subject to remain in dissonance and to suffer the minor discomfort associated with it, then to suffer the greater emotional cost of giving up a dearly held belief.

Thus, at least some emotionally underpinned states—perhaps including your view that your child is innocent—may have a masked capacity to be rationally revised. Where the negative feeling associated with cognitive dissonance is not strong enough to ‘unmask’ that capacity, those states will remain unrevised. If your view in your child’s innocence is such a state, then the revisability view can admit it into the class of belief. If, on the other hand, your view in your child’s innocence lacks altogether a nomic capacity to be rationally revised, perhaps because it is constitutively tied to positive feelings about your child, then the revisability view will exclude it from the class of belief.

3.2 States Excluded from the Class of Belief

So far, I have shown that the revisability view permits at least some irrational states into the class of belief, including at least some mental states that are sustained by confirmation bias and at least some emotionally underpinned states. Whatever else we might say about the revisability view, it does not commit the error of winding up a theory of good belief.

Nevertheless, the revisability view makes certain predictions that may seem counter-intuitive. For it excludes from the class of belief any mental state which is not capable of being rationally revised, even if that mental state: guides action, is sincerely endorsed by its subject, and serves as a premise in a wide range of inferences. There are two kinds of mental states which satisfy this description: the first kind is comprised of states which are neither formed in response to evidence nor subsequently enjoy a capacity to be revised in response to evidence. It may be that some faith-based religious views are like this. The second kind is comprised of states which are formed in response to good evidence, but which altogether lack a capacity to be subsequently revised. It's unclear whether states of this second sort are common in humans, but they are at least conceptually possible; call such states *idées fixes*.

First, consider the subject who makes a Kierkegaardian leap of faith and accepts—in some sense of ‘accepts’—that God exists. Suppose that the resulting acceptance lacks any capacity to be revised in response to conflicting evidence. Suppose further that this acceptance plays a substantial role in motivating behavior—for instance, it explains why its subject engages in prayer, attends religious services, and the like—and that this acceptance also is sincerely and explicitly endorsed by its subjects. Finally, suppose this acceptance is inferentially promiscuous, in that it is available as a premise in a wide range of inferences, such as: *If God exists, we should love our neighbors. God exists. So, we should love our neighbors*. All of these features would seem to suggest that this acceptance is a belief, its unrevisability notwithstanding. However, if this acceptance is genuinely nomically incapable of being rationally revised, the revisability view excludes it from the class of belief.

Next, consider a subject who forms the view that her neighborhood's farmer's market takes place on Fridays. This view is formed in response to excellent evidence. Some point after forming this view, this subject suffers a minor brain lesion which leaves her cognitive faculties entirely intact except for the curious result that she cannot revise her view about the local farmer's market. She sees flyers advertising that the market has been rescheduled for Sundays, her friends repeatedly tell her the market is now on Sundays, she even visits the farmer's market on Sundays (quite by accident, since she doesn't anticipate its being held then), but she simply cannot revise her view that the market is held on Fridays. She shows up at the usual spot every Friday, bags and shopping list in tow. She tells anyone who asks that the market is on Fridays. She relies on this claim as a premise in a wide range of inferences, such as: *The market is on Fridays. Today is Friday. The market is today.* The lesion has transformed her prosaic belief into an *idée fixe*.¹⁹ On the revisability view, this mental state is not a belief, even though it was formed in response to good evidence. It may, however, be some other cognitive attitude, such as an entertained thought, an assumption, a cognitive pretense, or a non-doxastic delusion.

That the revisability view excludes faith-based religious acceptances and *idées fixes* from the class of belief might suggest that the view is too strong. After all, these states are action-guiding, sincerely endorsed by their subjects, and inferentially promiscuous. If they do not count as beliefs, we should like some explanation of why they do not. In the absence of such an

¹⁹ I am presuming a certain view of the persistence of mental states, on which a particular mental state can survive changes in the kind of attitude it is. This is not an essential part of the story, though. It could be that the subject's belief was destroyed and replaced by a non-doxastic delusion with the same content.

explanation, it may seem that we should reject the revisability view, in favor of the following view:

THE ANTI-REVISABILITY VIEW OF BELIEF: At least some beliefs are not nomically capable of being revised in response to available, sufficiently strong evidence that conflicts with them.²⁰

3.3 *Sincere Assertion, Motivational Role, and Inferential Promiscuity*

In this section, I wish to defuse the intuition that unrevisable faith-based religious acceptances and *idées fixes* are beliefs. I do this by first, suggesting that the source of this intuition is that these states have many of the typical traits of belief: they guide action, they are sincerely endorsed by their subjects, and they exhibit inferential promiscuity. Second, I argue that none of these traits is sufficient for belief and hence, the fact that faith-based religious acceptances and *idées fixes* exhibit these traits should not be taken to entail that these states are beliefs. Thus, I aim to defuse the intuition that these states are beliefs by undermining the model of belief that undergirds the intuition.

First, consider motivational role. It may be thought that if a mental state governs action in the right way—for instance, disposes one to attend church, pray, and attempt proselytization of others—that this is sufficient for its being a belief. However, as many theorists have by now pointed out, it is not only belief which can motivate action. Arguably, pretenses and suppositions also guide action (Gendler, 2007; Gendler, 2008; Velleman, 2000). For instance, suppose you are pretending to be an elephant. You

²⁰ Something like the anti-revisability view is accepted by Gertler (2011), Huddleston (2012), Mandelbam (2014), Bayne and Pacherie (2005: 183), and Bortolotti (2011: 124).

might wave your trunk and walk clumsily and slowly. You don't (let's stipulate) believe you are an elephant. Plausibly, your pretense that you are an elephant itself motivates these actions (Velleman, 2000). It may be that there are certain kinds of motivational roles that only belief can play, but it is at least not obvious what these would be.

Second, consider sincere assertion. It may be that as a general rule, if some subject sincerely asserts p , that subject believes p . But there are cases in which sincere assertion that p occurs even when the subject does not believe p . The reason for this is quite simple: subjects don't always know what they believe and can also have false beliefs about what they believe. For instance, consider a case of self-deception in which a subject believes that his husband is cheating on him but cannot admit this to himself. Such a subject might sincerely assert that his husband is faithful, while nevertheless exhibiting behavior that is consistent with his belief, such as feeling sad when his husband calls yet again to say that he will be working late, and asking his husband more questions than usual about his whereabouts. If this sort of case is so much as possible, sincere assertion that p does not entail belief that p .²¹

Finally, consider inferential promiscuity, which is availability as a premise in a wide range of inferences. Mental states that are inferentially promiscuous have a kind of productive power; they can inferential-causally generate new mental states. Inferential promiscuity may be a necessary condition on belief, but it is not sufficient for belief. Consider that attitudes

²¹ Cohen (1992, pp. 68-73) also argues that sincere assertion does not entail belief, as does Mandelbaum (2014, pp. 79-81).

other than belief, such as supposition, also exhibit inferential promiscuity. For instance, suppositions can act as premises in arguments by *reductio*.²²

Consider the geometry student tasked with proving that no triangle has four sides. To do this, this student might suppose, for the sake of proving otherwise, that there is a triangle that has four sides and then attempt to generate a contradiction, as part of a demonstration that the original supposition is false. We might say that this student ‘hypothetically adds to her stock’ of beliefs that there is a triangle that has four sides, but whatever it is to hypothetically add to one’s stock of beliefs that there is a

²² Strictly speaking, mental states do not serve as premises in arguments. Arguments are sets of propositions structured by a relation of putative validity. As such, they are abstract, mind-independent entities—certainly not the sorts of things that contain mental states. Saying that a mental state ‘serves as a premise’ in an argument is a loose way of saying that a mental state figures in a *psychological inference*. Psychological inferences are sets of mental states structured by a relation of putative validity; they are the mechanisms by which subjects grasp arguments.

triangle that has four sides, it is not to *believe* that there is a triangle that has four sides. It is to suppose it or merely entertain it.²³

Given these considerations, we should be at least doubtful whether motivational role, sincere assertion, or inferential promiscuity are sufficient for belief. So, we should be at least doubtful whether faith-based religious views and *idées fixes* are beliefs. Thus, that the revisability view excludes such states from the class of belief does not suggest a reason to reject the revisability view.

Moreover, the argument in favor of the revisability view is simultaneously a reason for excluding faith-based religious views and *idées fixes* from the class of belief: because the norm of revision and ‘*ought*’ implies ‘*can*’ cannot be simultaneously true of these states, we should not class them as beliefs.

Consider again the subject who suffers from an unrevisable *idée fixe* that the farmer’s market is on Fridays. Notice that the following two claims

²³ Certain kinds of counterfactual reasoning provide more evidence of the inferential promiscuity of suppositions. Consider a case in which a consumer researcher asks you fill out a survey about food choices, which includes the following question: *Suppose you are having pizza for dinner. What would you order with it? Beer or wine?* One way to answer this question would be to simply comply with the task instructions, and to *suppose* that you are having pizza for dinner and then—by using inductive evidence from ‘seeing’ what your choice would be in that counterfactual situation—generate a hypothesis about what you would do in the relevant counterfactual. But of course, you don’t *believe* you are having pizza for dinner. You merely entertain the thought or suppose it, and this supposition plays an essential inferential role in the generation of your hypothesis.

—which are instances of the first two premises of the argument from the norm of revision—cannot be simultaneously true of this subject:

(1*) If *S*'s mental state that represents 'the farmer's market is on Fridays' is a belief, then *S* has a pro tanto requirement of rationality to revise that mental state.

(2*) If *S* has a pro tanto requirement of rationality to revise her mental state that represents 'the farmer's market is on Fridays,' then *S* is nomically capable revising that mental state.

The subject's *idée fixe* cannot simultaneously satisfy (1*) and (2*). But as the discussion in §2 demonstrated, we have independent grounds for accepting the broader principles of which (1*) and (2*) are merely instances. If the subject's *idée fixe* really is a belief, it is subject to the norm of revision and hence, should satisfy (1*). But if it is subject to the norm of revision, it should enjoy a correlative nomic capacity to be revised and hence, should satisfy (2*). That the *idée fixe* cannot meet both of these requirements counts as a positive reason to exclude it from the class of belief.

In short, because *idées fixes* exhibit belief-like traits—such as inferential promiscuity, motivational role, and a connection to sincere assertion—we mistook them for beliefs, because many mental states with those features are beliefs. But closer reflection reveals *idées fixes* not to be beliefs, but rather to be pretenses, assumptions, or non-doxastic delusions. The same points apply mutatis mutandis to faith-based religious acceptances.

4 Conclusion

I have developed and defended the view that all beliefs are necessarily nomically capable of being rationally revised in response to available, sufficiently strong contravening evidence. I have argued that this view is weak enough to accommodate beliefs that are for contingent reasons unresponsive to evidence. At the same time, the view is strong enough to accommodate belief's susceptibility to the norm of revision. Views which reject a connection between belief and a nomic capacity to be revised struggle to accommodate belief's susceptibility to this norm.

The revisability view has the surprising result that some faith-based religious acceptances and *idées fixes* are not beliefs. Though initially counter-intuitive, this result should not be taken as a reason to reject the revisability view, as the presumption that faith-based religious acceptances and *idées fixes* are beliefs is rooted in an incorrect view about which conditions suffice for belief.

REFERENCES

- Adler, J. 2002. *Belief's Own Ethics*. Cambridge, MA: MIT Press.
- Baillie, J. 2013. 'The Expectation of Nothingness.' *Philosophical Studies*, 166(1): 185-203.
- Bayne, T., & Pacherie, E. 2005. 'In Defence of the Doxastic Conception of Delusions.' *Mind & Language*, 20(2): 163-188.
- Bortolotti, L. 2010. *Delusions and Other Irrational Beliefs*. Oxford: Oxford University Press.
- Bykvist, K. and Hattiangadi, A. 2007. 'Does Thought Imply Ought?' *Analysis* 67: 277 - 285.
- Cassam, Q. 2010. 'Judging, Believing, and Thinking.' *Philosophical Issues* (20)1: 80-95.

- Chrisman, M. 2008. 'Ought to Believe.' *Journal of Philosophy* 105: 346 – 370.
- Cohen, L. J. 1992. *An Essay on Belief and Acceptance*. Oxford: Clarendon Press.
- Currie, G. and Ravenscroft, I. 2002: *Recreative Minds*. Oxford: Oxford University Press.
- Davidson, D. 1984. *Inquiries into Truth and Interpretation*. Clarendon: Oxford University Press.
- Davies, M., & Coltheart, M. 2000. 'Introduction: Pathologies of Belief.' *Mind & Language* 15(1): 1-46.
- Dennett, D. C. 1989. *The Intentional Stance*. Cambridge, MA: MIT Press.
- Doggett, T., & Egan, A. 2007. 'Wanting Things You Don't Want.' *Philosophers' Imprint* 7(9): 1-17.
- Döring, F. 1990. 'Limits of Irrationality,' *Philosophy and Psychopathology* 86-101.
- Egan, A. 2009. 'Imagination, Delusion, and Self-deception' in *Delusion and Self-deception: Affective and Motivational Influences on Belief Formation*, eds. T. Bayne and J. Fernandez. New York: Psychology Press.
- Elliot, A. and Devine, P. 1994. 'On The Motivational Nature of Cognitive Dissonance: Dissonance as Psychological Discomfort,' *Journal of Personality and Social Psychology* 67: 382-394.
- Feldman, R. 2000. 'The Ethics of Belief,' *Philosophy and Phenomenological Research* 60: 667-695.
- Frankish, K. 2012. 'Delusions, Levels of belief, and Non-doxastic Acceptances,' *Neuroethics* 5(1): 23-27.

- Friedman, J. 2013. 'Suspended Judgment.' *Philosophical Studies* 162(2): 165-181.
- Gawronski, B. 2012. Back to the Future of Dissonance Theory: Cognitive Consistency as a Core Motive.' *Social Cognition* 30(6), 652-668.
- Gendler, T. S. 2007. 'Self-deception as Pretense,' *Philosophical Perspectives* 21(1): 231-258.
- Gendler, T. S. 2008. 'Alief and Belief,' *The Journal of Philosophy* 634-663.
- Glüer, K. and Wikforss, Å. 2013. 'Aiming at Truth: On the Role of Belief.' *Teorema* 32(3): 137-162.
- Graham, P. A. 2011. "'Ought' and Ability.' *The Philosophical Review* 120: 337- 382.
- Harmon-Jones, E. 2000. 'A Cognitive Dissonance Theory Perspective on the Role of Emotion in the Maintenance and Change of Beliefs and Attitudes.' *Emotions and Beliefs* 185-211.
- Harmon-Jones, E. and Harmon-Jones, C. 2007. 'Cognitive Dissonance Theory After 50 Years of Development.'
- Hattiangadi, A. 2010. 'The Love of Truth.' *Studies in History and Philosophy of Science* 41: 422 - 432.
- Haug, M. 2011. 'Explaining the Placebo Effect: Aliefs, Beliefs, and Conditioning.' *Philosophical Psychology* 24(5): 679-698.
- Hazlett, A. 2013. *A Luxury of the Understanding: on the Value of True Belief*. Oxford: Oxford University Press.
- Hieronymi, P. 2006. 'Controlling Attitudes.' *Pacific Philosophical Quarterly* 87(1): 45-74.
- Huddleston, A. 2012. 'Naughty Beliefs.' *Philosophical Studies* 160: 209-22.
- Kelly, T. 2008. 'Evidence: Fundamental Concepts and the Phenomenal

- Conception,' *Philosophy Compass* 3(5): 933-955.
- Lehrer, K. 1976. "Can' in Theory and Practice: A Possible World Analysis.' in *Action Theory*, eds. Brand and Walton. Dordrecht: D. Reidel.
- Leon, M. 1992. 'Rationalising Belief.' *Philosophical Papers*, 21(3): 299-314.
- Lipton, P. 2007. 'Accepting Contradictions' Monton, B. (Ed.). *Images of Empiricism: Essays on Science and Stances*. Oxford: Oxford University Press.
- Littlejohn, C. 2012. 'Does 'Ought' Still Imply 'Can'?' *Philosophia* 40(4): 821-828.
- Mandelbaum, E. 2014. 'Thinking is Believing.' *Inquiry* 57(1): 55-96.
- McKay, R. T., & Dennett, D. C. 2009. 'The Evolution of Misbelief.' *Behavioral and Brain Sciences* 32(06): 493-510.
- Mizrahi, M. 2012. 'Does 'Ought' Imply 'Can' From an Epistemic Point of View?' *Philosophia* 40: 829-840.
- Nickerson, R. S. 1998. 'Confirmation Bias: A Ubiquitous Phenomenon in Many Guises.' *Review of General Psychology* 2(2): 175.
- Ryan, S. 2003. 'Doxastic Compatibilism and the Ethics of Belief.' *Philosophical Studies* 114(1): 47-79.
- Schwind, C., Buder, J., Cress, U., & Hesse, F. W. 2012. 'Preference-inconsistent Recommendations: An Effective Approach for Reducing Confirmation Bias and Stimulating Divergent Thinking?' *Computers & Education* 58(2): 787-796.
- Schwitzgebel, E. 2001. 'In-between Believing.' *The Philosophical Quarterly* 51(202): 76-82.
- Schwitzgebel, E. 2002. 'A Dispositional, Phenomenal Account of Belief.' *Noûs* 36(2): 249-275.

- Schwitzgebel, E. 2012. 'Mad Belief?' *Neuroethics* 5(1): 13-17.
- Shah, N., & Velleman, J. D. 2005. 'Doxastic Deliberation.' *The Philosophical Review* 497-534.
- Slaughter, V., Heron-Delaney, M., Christie, T., Slaughter, V., & Brownell, C. 2011. 'Developing Expertise in Human Body Perception.' *Early Development of Body Representations*, eds. Slaughter & Brownell. Cambridge: Cambridge University Press.
- Steup, M. 2008. 'Doxastic Freedom.' *Synthese* 161(3): 375-392.
- Stich, S. P. 1978. 'Beliefs and Subdoxastic States.' *Philosophy of Science* 499-518.
- Strevens, M. 2012. 'Notes on Bayesian Confirmation Theory.' unpublished manuscript.
- van Leeuwen, D. N. 2009 'The Motivational Role of Belief.' *Philosophical Papers* 38(2): 219-246.
- Velleman, D. 2000. *The Possibility of Practical Reason*. Oxford: Oxford University Press.
- Vranas, P. 2007. 'I Ought, Therefore I Can.' *Philosophical Studies* 136: 167 - 216.
- Way, J. 2010 'The Normativity of Rationality.' *Philosophy Compass* 5(12): 1057-1068.
- Wedgwood, R. 2002. 'The Aim of Belief.' *Noûs*, 36(s16), 267-297.
- Whiting, D. 2010. 'Should I Believe the Truth?' *Dialectica* 64: 213-224.