

The Beliefs and Intentions of Buridan's Ass*

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Finnur Dellsén
University College Dublin
finnurd@gmail.com

Nathaniel Sharadin
Syracuse University
natesharadin@gmail.com

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Abstract

The moral of Buridan's Ass is that it can sometimes be rational to perform one action rather than another even though one lacks stronger reason to do so. Yet it is also commonly believed that it cannot ever be rational to believe one proposition rather than another if one lacks stronger reason to do so. This asymmetry has been taken to indicate a deep difference between epistemic and practical rationality. According to the view articulated here, the asymmetry should instead be explained by the difference between rational intentions and rational actions. Thus, it turns out, Buridan's Ass-style cases do not indicate an asymmetry between epistemic and practical rationality as such.

1. Introduction

A hungry ass is halfway between two indistinguishable bundles of hay. The consensus among philosophers is that it would be rational for the ass to go to either bundle. The moral of the story is that the following principle is false:

Action Sufficient Reason (ASR): It is practically rational to ϕ rather than ψ only if there are stronger practical reasons to ϕ than to ψ .

However, suppose the ass is wondering which bundle has more hay (and suppose the ass knows they are not equally sized). Since the ass has no reason to think either bundle has more hay, the consensus among philosophers is that it would *not* be rational for the ass to believe that either bundle has more hay. The moral of *this* story is that the following principle is *true*:

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Belief Sufficient Reason* (BSR*): It is epistemically rational to believe P rather than Q only if there are stronger epistemic reasons to believe P than to believe Q .¹

So there appears to be an asymmetry between reasons in the practical and the epistemic realm. What gives? Gilbert Harman takes this asymmetry to be an “important difference” (Harman 1999: 14) between theoretical and practical reasoning. Pamela Hieronymi claims it shows that “practical reasoning is not governed by the same principles as theoretical reasoning,” but gives no further explanation of this difference (Hieronymi 2009: 208). Similarly, Ruth Weintraub claims that epistemic rationality differs from practical rationality in enjoining us to “forgo an option which is at least as good as any other” but does not go on to explain *why* epistemic rationality differs from practical rationality in this way (Weintraub 2012: 298).

Rather than attempting to explain the purported asymmetry, we think we should deny it exists. So, in this paper we develop an account – the Parity Account – according to which there is no asymmetry between practical and epistemic rationality in this respect, i.e., in cases where reasons for two incompatible options are equally strong. The plan for the paper is this: In the next section (§2), we lay out the Parity Account and explain its components. Next (§3), we offer an independent argument in favor of the major component of the Parity Account. We then consider and reply to an objection to the Parity Account (§4). In the final three sections (§§5-7) we consider whether accepting the Parity Account leaves us with any remaining, unresolved asymmetries. The upshot of the paper is that one important reason for thinking that the requirements of practical and epistemic rationality are asymmetrical (i.e., Buridan’s Ass-style cases) is not compelling. This is an important result for, insofar as we are interested in a unified, systematic account of the nature of reasons and rationality, an account that allows for *symmetry* between the practical and epistemic domains should be preferred to one that introduces an unexplained asymmetry.

A brief clarification about the scope of our argument before we start. We’re interested, here, in arguing against an asymmetry in the requirements of rationality when it comes to cases such as Buridan’s Ass. Our account, which includes *no* asymmetry is obviously preferable to accounts – such as those mentioned above – that include an *unexplained* asymmetry between practical and epistemic rationality in this regard. Here, although we’ll present independent reasoning in favor of adopting a symmetrical account such as the one we offer here, we won’t directly argue that our view is preferable to accounts that include *and explain* an asymmetry between practical and epistemic rationality with respect of cases like Buridan’s Ass. Hence, strictly speaking, we leave open the question whether our account is preferable to, for instance, an account of practical and epistemic

¹The asterisk indicates that this principle will shortly be modified to take account of the fact that beliefs come in degrees (see §2).

rationality according to which practical and epistemic rationality enjoy some (explained yet) fundamental asymmetry in this regard.²

2. *The Symmetry Between Practical and Epistemic Rationality*

In contrast to Harman, Heironymi and Weintraub, the account developed here defends the claim that there is no asymmetry between practical and epistemic rationality in cases such as Buridan’s Ass. Briefly put, the idea is that when the comparison between practical and epistemic decisions is made at the appropriate level, we see that the alleged asymmetry between the practical and the epistemic is only apparent. We can call this the **Parity Account**. The account has three separate but related components. In this section, we discuss these components; in subsequent sections, we address objections aimed at each component.

The first component of the Parity Account is that the proper practical analog of *belief* is not *action*, but *intention*. Call this the **Belief-Intention Analogy**. There are two motivations for the Belief-Intention Analogy: First, note that just as beliefs are the mental states that agents (when functioning properly) *reason* in accordance with, intentions are the mental state that agents (when functioning properly) *act* in accordance with. Beliefs and intentions are the mental backdrop against which agents reason and act, respectively. Second, beliefs and intentions both have content, whereas actions do not – beliefs and intentions are *about* something while actions are not in the relevant sense *about* anything. Both beliefs and intentions are, while actions are not, *contentful mental states*. This strongly suggests that just as the norms of epistemic rationality governs belief in the first instance, the norms of practical rationality govern intentions in the first instance.^{3,4}

The second component of the Parity Account is that both beliefs and intentions come in *degrees*; that is, both are *gradable* states. Call this the **Gradability Thesis**. In the case of belief, this thesis is familiar and widely accepted: agents’ doxastic states can be described in terms of their degrees of belief, i.e. credences, and these are widely assumed to be governed by probabilistic norms of rationality.⁵ Of course, it is often convenient to describe agents as believing propositions *simpliciter* (as opposed to having particular degrees of belief in propositions), but on the current view this should not be taken to indicate that there is some further doxastic attitude – *belief simpliciter* – that God would have had to create once she had endowed all agents with degrees of belief. Rather, the

²Thanks to an anonymous referee for urging clarity on this point.

³See Shah (2003, 2008) for a different route to this same idea, that belief and intention are what the norms of epistemic and practical rationality govern, respectively.

⁴We don’t mean to suggest that actions are not governed by practical norms at all, or that the label ‘practical’ applies only to norms governing intention, not also those governing actions. Indeed, we discuss (practical) norms for action in detail below (see especially the end of this section, and §§6-7).

⁵See, e.g., Kyburg (1961), Jeffrey (1973), Christensen (2004).

folk concept of belief *simpliciter* simply denotes contextually-determined sets of degrees of belief – usually if not always to a degree of belief above some contextually-determined threshold.⁶

Taking account of this point, we can restate BSR* – the principle that says it’s irrational to believe on the basis of insufficient reason – in a way that applies to *graded* belief:

Belief Sufficient Reason (BSR): It is epistemically rational to have a higher degree of belief in P than in Q only if there are stronger epistemic reasons to believe P than to believe Q .

BSR says that rationality in (degree of) belief requires support by sufficient reason: one can’t rationally have a higher degree of belief in P than in Q unless the reasons in favor of thinking P is the case are stronger than the reasons in favor of thinking Q is. For our ass, who has no reasons to believe that either of the two bundles has more hay, BSR yields the result that the ass’s degree of belief that the left bundle has more hay should *match* the ass’s degree of belief that the right bundle has more hay.

A clarification: BSR imposes a restriction on the rationality of having a higher degree of belief in some proposition P than another proposition Q . It says that this should only occur when there are stronger reasons to believe P than Q . This implies that when the reasons for believing P and Q are equally strong, one should not have a higher degree of belief in P than in Q . This in turn implies that, if one has any degrees of belief in both P and Q at all, then these should be equally strong. Notice, however, that BSR is compatible with an agent *lacking any* degree of belief in either or both of P and Q . Thus, for example, BSR does *not* tell us anything about the rationality of having a degree of belief in P but lacking any degree of belief in Q when there are equally strong reasons to believe each proposition.⁷

So far we have noted that belief is a gradable state. That *intention* is a gradable state is less familiar thesis and, correspondingly, it is a less widely accepted idea. However, once the possibility of gradable intention is raised, it is hard to deny. This is so for at least two reasons: First, the thesis is intuitively plausible as a description of our mental life since we do distinguish between our stronger and weaker intentions. For

⁶See, e.g., Foley (1992), Weatherson (2005), Ganson (2008), Sturgeon (2008).

⁷But, see §6 below for further discussion. We thank an anonymous referee for bringing this point to our attention. Admittedly, there is an issue here about what it is to lack any degree of belief at all in some proposition. We are inclined towards the view that to lack any degree of belief at all is to have a completely mushy or indeterminate degree of belief that stretches over the entire unit interval, i.e. $[0,1]$, instead of being a specific point on that interval (see, e.g., Levi 1974; van Fraassen 1990; Joyce 2010; Moss 2015). One nice thing about this kind of picture is that it allows for the extent to which you have a degree of belief in a proposition to be a matter of degree as well: it will depend on how mushy your degree of belief is, where “how mushy” is determined by how large the interval is that describes your degree of belief (a larger interval corresponds to a mushier degree of belief, with the limits being (a) the entire unit interval $[0,1]$ and (b) a specific point on that interval, e.g. 0.7. But, for all we say here, it may be that some alternative picture of what it is to lack any degree of belief at all is preferable.

example, a father may have a very strong intention to buy his daughter a birthday present, a somewhat weaker intention to buy his daughter a book for her birthday, and a yet weaker intention to buy her a book about Winnie-the-Pooh. The most natural and plausible way of modelling these variations is by taking intention, like belief, to be an inherently gradable type of state.⁸

Second, the gradability of intention is needed to avoid analogs of the preface paradox for rational intention.⁹ A non-gradable conception of intention yields counterintuitive results according to which combinations of seemingly rational intentions cannot count as rational. For instance, borrowing from Goldstein (2016): Susan may strongly intend to visit each of 20 different cathedrals on her trip to Europe, and she may also strongly intend to skip visiting one of them (since she can only afford the entrance fee for 19 cathedrals). If we take Susan's intentions to be non-gradable, her intentions count as mutually inconsistent and thus irrational. On a gradable conception of intention, by contrast, there is no necessary inconsistency since a strong intention to perform *each* of 20 actions is compatible with a strong intention not to perform *all of them*. The upshot is that these preface-like paradoxes are effortlessly resolved in much the same way that a gradable conception of belief solves the preface paradox.¹⁰

Some might find these motivations for accepting the Gradability Thesis about intention insufficient. Here, our aim is not to argue for the Gradability Thesis about either belief or intention. Instead, we provide these cases as motivation for accepting that view, at least for the sake of argument. We aim to show what work the view can do for us, if we accept it. Readers uncomfortable with the suggestion that intention, like belief, is a gradable state are invited to read the following arguments conditionally: *if* we accept the Gradability Thesis about both belief and intention, then we can dissolve the apparent asymmetry between practical and epistemic rationality.

Now, with the Belief-Intention Analogy and the Gradability Thesis about belief and intention in place, the *third* component of the Parity Account is that, as with belief, rationality in intending to do one thing more strongly than another requires the presence

⁸Bratman (1987) has suggested, if perhaps only indirectly, that cases of this sort can be redescribed as involving either (full) intentions or 'endeavorings,' an intention-like state that amounts to having a "guiding desire" to perform the action. Bratman's suggestion is arguably problematic in that it posits two distinct kinds of intention-like states, thus failing to unify the different guises of intention (McCann 1991). More importantly for our purposes, this move clearly will not work in this case since there are three different types of intention-like states in this case, and Bratman has provided us only with two (i.e. intentions and endeavorings). (See also Holton (2008) and Schpall (2016) for additional arguments that Bratman's move (and other similar moves) will not work in general.)

⁹For the classic statement of the preface paradox in the case of belief, see Makinson (1965).

¹⁰For two recent arguments for the idea that intentions come in degree that appeal to analogs of the preface paradox, see Goldstein (2016) and Schpall (2016). Holton (2008) similarly argues that intentions can be partial, though he suggests they would not be gradable in the same way as degrees of belief. It's also worth noting that Bratman (1987) discusses "partial intentions," but he means something very different by this than what we (and Goldstein, Holton, and Schpall) mean here. Interestingly, Goldstein (2016) argues that Bratman's conception of intention implies that there must be partial intentions in the sense we intend.

of stronger reasons to intend to do that first thing. More precisely:

Intention Sufficient Reason (ISR): It is practically rational to have a higher degree of intention to ϕ than to ψ only if there are stronger practical reasons to intend to ϕ than to intend to ψ .

For our ass, ISR yields the result that the ass's degree of intention to go to the left bundle should *match* the ass's degree of intention to go to the right bundle. In effect, then, the ass should be, with respect to its degrees of intention regarding the left and right bundles, in equipoise: after all, the ass has neither more reason to intend to go left than right, nor more reason to intend to go right than left. Note, however, that it does not follow that the ass should be, with respect to all its bundle-involving intentions, in equipoise. After all, we've said that the ass is hungry and wants to eat hay: so, the ass will have a very high degree of intention to go to *either* the right bundle *or* the left bundle and a correspondingly very low degree of intention to go to *neither* bundle. Since the ass, by hypothesis, has much stronger practical reasons to go to *either* bundle than it does to go to *neither* bundle, ISR happily permits the ass to form a very strong intention to go to either bundle.

As in the case of belief, a clarification is in order. ISR imposes a restriction on the rationality of having a higher degree of intention to ϕ than to ψ ; it says that this should only occur when there are stronger reasons to intend to ϕ than to ψ . This implies that when the reasons for intending to ϕ and ψ are equally strong, one should not have a higher degree of intention to ϕ than to ψ . This in turn implies that, if one has degrees of intentions to ϕ and ψ at all, then they should be equally strong. Notice, however, that ISR is compatible with an agent lacking any degree of intention with regards to either or both of ϕ -ing and ψ -ing. Thus, for example, ISR does not tell us anything about the rationality of having a degree of intention to ϕ but lacking any degree of intention with respect to ψ -ing when there are equally strong reasons to intend each action.¹¹

So the Parity Account holds, first, that epistemic and practical rationality govern belief and intention respectively (the Belief-Intention Analogy); second, that belief and intention are both gradable mental states (the Gradability Thesis); and third, that practical rationality requires that one has stronger intentions for one action rather than another only if one has stronger practical reasons for intending the former than one has for intending the latter (Intention Sufficient Reason, ISR). This dissolves the apparent asymmetry between practical and epistemic rationality with respect to Buridan's Ass since structurally identical principles – viz. ISR and BSR – govern the practical response it is rational for the ass to have (in terms of its intentions) and the epistemic response it is rational for the ass to have (in terms of its beliefs). The idea, then, is that

¹¹ Again, as in the case of belief, there is an issue here about what it is to lack any degree of intention at all to perform an action. We are inclined towards a view that treats such cases symmetrically to the case of lacking a credence, but the details of such an account would take us too far afield.

once the comparison is made at the appropriate level – in terms of graded intention and graded belief – there simply *isn't* any difference between what it's rational for the ass to do when the (practical or epistemic) reasons in favor of two alternatives are equally strong. When the practical reasons in favor of two courses of action are equally strong, it is irrational to intend to perform one of them more strongly than the other. And when the epistemic reasons in favor of two propositions are equally strong, it is irrational to believe one of them more strongly than the other.¹²

One might wonder how *actions* enter this picture. After all, there is clearly some relationship between rational actions and rational intentions. Although nothing about the Parity Account commits it to any particular view about that relationship, it seems clear what a proponent of the Parity Account *should* say about this relationship, viz. that in order for it to be rational to intentionally perform some action ϕ rather than intentionally perform some alternative action ψ , it must be rational to have a greater *or equal* degree of intention to ϕ as to ψ . In the case of Buridan's Ass, this condition is met: by ISR, it is not irrational to have the *same* degree of intention to ϕ as it is to ψ . So, were the ass to intentionally go to the left bundle, its action would be rational according to ISR; the same can be said were it to go to the right bundle.

The upshot is this: if the Parity Account is correct, what's required for it to be rational for the ass to actually *go* to (say) the left bundle rather than the right is *not* that it's rational for the ass to intend to a greater degree to go to the left bundle rather than the right. All that's necessary is that it be rational for the ass to have a greater *or the same* degree of intention to go to the left bundle as the right. Thus it can be rational to perform some action even if there is no overall practical reason to perform that action rather than some other action, despite the fact that rationally *intending* to a greater degree to perform some action requires that it be rational to have an overall practical reason to perform that action.¹³

3. Independent Support for ISR

The Parity Account, as we've just seen, dissolves the apparent asymmetry between epistemic and practical rationality. ISR is crucial to its ability to do so: it's because intentions to perform one action rather than another shouldn't be arbitrarily strong that, in cases such as Buridan's Ass, the epistemic and practical responses it's rational for the ass to

¹²Here and in what follows, we use "S intends X more strongly than Y" and "S believes X more strongly than Y" as shorthands for "S's degree of intention to X is higher than S's degree of intention to Y" and "S's degree of belief in X is higher than S's degree of belief in Y". For stylistic reasons, we also freely move between other locutions involving these and other cognate terms. For instance: we will sometimes refer to the "strength" and sometimes to the "degree" of an agent's intentions and beliefs.

¹³The point here is related to the idea that, in practical cases, it can sometimes be rational to "plump" for one action or another. For a nice discussion of this phenomenon, see Blackburn (2012). What the Parity Account insists on is that, while it can be rational to plump for one action over another, it isn't rational to plump for having a stronger intention to perform one action rather than another.

have are, *mutatis mutandis*, the same. So, one reason for accepting ISR is that it helps us dissolve what would otherwise be a puzzling, unexplained asymmetry between epistemic and practical rationality. But is there any *independent* reason – that is, independent from its use in this argument – for accepting ISR? Yes: alternatives to ISR, principles that allow for intentions to be arbitrarily strong, all deliver problematic results in a range of cases. Let us explain.

Suppose some alternative to ISR is true. Then there will be cases where, without exhibiting any irrationality, an agent more strongly intends to ϕ than she intends to ψ , even when the reasons in favor of intending to ϕ and intending to ψ are equally strong. (Since this is precisely what ISR denies, any alternative to ISR must allow for this possibility.) Perhaps the ass is supposed to be a case in point: we can imagine that the ass more strongly intends to go to the left bundle than the right bundle, despite lacking a reason that more strongly favors intending to go left than intending to go right. According to the current idea, *there is nothing irrational about doing so*.

The problem with this proposal becomes clear if we imagine what happens, in a scenario such as the one we're considering, if the ass were to learn that the right bundle contains one more straw of hay than the left bundle. That fact is, by hypothesis, a reason for the ass to increase the degree of its intention to go right rather than left (or, what amounts to the same thing, a reason to decrease the degree of its intention to go left rather than right). Even the proponent of some alternative to ISR, who thinks it's not irrational to arbitrarily have a stronger intention to do one thing rather than another, should admit that failing to respond to this reason in this way would itself be irrational, so let's suppose the ass does respond to it, either by increasing the degree of its intention to go right rather than left, or by decreasing the degree of its intention to go left rather than right. What is the result?

The desired result, the result we can all agree would be the rational result in terms of the ass's intentions, is that the ass now more strongly intends to go right than left. After all, the ass just learned that the right bundle has more hay in it, and, by hypothesis, the ass wants as much hay as possible. But if the proposal we're considering here is correct, this result does not follow. For notice that if *any* alternative to ISR is correct, there is no reason the ass, even after increasing its degree of intention to go right, would not end up in a state in which it still has a stronger intention to go left, or a state in which its intentions to go left and to go right are equally strong. Of course, whether this sort of case materializes will depend on how much stronger the intention to go left was initially, and how strong a reason for going right is provided by the information that the right bundle contains slightly more hay. However, the point remains that no alternative to ISR will *guarantee* that gaining a practical reason to intend to ϕ rather than intend to, in a situation where you had no such reasons before, will make it rational to to have a stronger intention to ϕ than ψ .

So, independently of its use by the Parity Account in dissolving the asymmetry in Buridan's Ass style cases, ISR is made plausible by the fact that it guarantees that gaining a reason to ϕ rather than ψ 'tips the balance' in favor of ϕ -ing if the scales were equally balanced before. However, one might think that ISR isn't the only principle that guarantees this. In particular, consider a principle such as:

Stronger Reason (SR): If agent A has stronger reason to intend to ϕ than to intend to ψ , then it would be irrational for A to both intend to some degree to ϕ and also intend to some equal or greater degree to ψ .

If true, SR would explain why, in the sorts of cases outlined above, it would be irrational for the ass to end up in a state where its intention to go left and its intention to go right are equally strong, and it would do so without appeal to ISR. So, it might appear that ISR is otiose, and opponents of it can simply accept SR, which is plausible in its own right, and go on to reject ISR, while continuing to deliver the required result.¹⁴

However, there are at least two problems with this response. First, supposing that SR is true, we can ask what *explains why* it is true. And, we suggest, the most plausible explanation of SR is provided by:

Reason-Intention-Proportionality (RIP): If an agent A intends to ϕ , A's degree of intention to ϕ should (on pain of irrationality) be proportional to the strength of A's reasons for intending to ϕ .

RIP is very plausible on its own. (So, too, is the corresponding principle for belief, which claims that an agent's degree of belief in a proposition P , if she has one, should be proportional to the strength of her epistemic reasons to believe P .) Moreover, RIP explains why SR is true in an elegant way: Why is it irrational, given stronger reasons to intend to ϕ , to have an equally strong or even stronger intention to ψ ? Because the strength of one's intentions ought to be spread across actions proportional to the strength of the reasons there are for those intentions. But notice that the opponent of ISR cannot appeal to RIP in order to explain SR. For note that RIP does not just entail SR, it also entails ISR. So, while we're happy to accept SR, doing so won't do away with the argument for ISR, since the best explanation of why SR is true appeals to a principle, viz. RIP, which itself entails ISR.

A second problem with using SR to handle the cases discussed above while rejecting ISR emerges when we consider how degrees of intention should rationally change when one gains reasons for or against intending something. Consider the following very plausible principle:

Reason-Intention-Gain (RIG): If agent A gains a reason to intend to ϕ (and gains no other reasons), then A should (on pain of irrationality)

¹⁴Thanks to an anonymous referee for suggesting SR as an alternative explanation of the cases.

increase her degree of intention to ϕ (unless A's degree of intention was already maximal, in which case it should stay maximal).¹⁵

Anyone who accepts SR but rejects ISR will have to deny RIG. To see why, consider an agent A who, at t_1 , has *equally* strong reasons to intend to ϕ as she has to intend to ψ , and yet intends to ϕ more strongly than she intends to ψ (in violation of ISR but not SR). Now suppose that, at a later time t_2 , A gains a reason to intend to ϕ (but does not gain a reason to intend to ψ) and so, by the lights of SR, all that's required is that A should continue to intend to ϕ more strongly than she intends to ψ . Indeed, for all SR tells us, we can suppose that the rationally required state of comparative intentions at t_2 is *exactly the same* as the state she was in before, i.e. at t_1 . In that case, A would have gained a reason to intend to ϕ (and no other reason), and yet according to someone who accept SR but rejects ISR, A should not increase her degree of intention to ϕ . This is so despite the fact that, as we've described the case, it's possible that the original intention to ϕ is not maximal. Hence a proponent of SR who rejects ISR must also reject RIG. And, again, that seems to be the wrong result.

4. *The Intentional Action Objection*

We've just seen an argument against alternatives to ISR (and so in favor of ISR itself) to the effect that those alternatives deliver unacceptable results in terms of the rationality of particular intentions. But it might appear that accepting ISR has its own unacceptable results. In particular, it might appear that accepting ISR delivers unacceptable results regarding the rationality of particular intentional *actions*. We'll call this the **Intentional Action Objection** to ISR.

The objection starts with what is perhaps a natural principle connecting intentions and intentional actions:

Stronger Intention Principle (SIP): If one ϕ s intentionally at some time t , then at t the degree of one's intention to ϕ is necessarily higher than the degree of each of one's competing intentions at t , where competing intentions are other intentions that cannot by one's own lights be executed simultaneously.

For example, if an agent raises her hand intentionally at 1:15pm, then at 1:15pm the agent's intention to raise her hand is stronger than each of her competing intentions at 1:15pm, e.g. to shake her hand or to keep it where it was. The objection proceeds: it

¹⁵Note that even those who accept the possibility of attitudes that are insensitive to what Caspar Hare (2010) calls "mild sweetening" should not reject RIG, since by hypothesis mild sweetening-insensitive attitudes are not *ipso facto* irrational, and so the agent is not failing to respond to a reason she has if she fails to increase the degree of the attitude in the face of the sweetening.

certainly does not seem irrational for the ass to intentionally go to the left bundle at some particular time t . (Indeed, we've already granted this claim.) Thus, given SIP, the ass's intention to go to the left bundle at t *must* be stronger than each of the ass's competing intentions at t . Now, ISR says that it would be *irrational* for the ass's intention to go to the left bundle to be stronger than each of the ass's intentions at t , and in particular that it would be irrational for the ass's intention to go to the left bundle to be stronger at t than the ass's intention to go to the right bundle. But then ISR says that the ass is *necessarily* subject to some irrationality: after all, the ass will (if SIP is correct) necessarily intend to a greater degree to go to the left bundle at t than it will intend to go to the right bundle at t , and doing so is (according to ISR) irrational. Hence ISR must be mistaken, since it involves agents in unavoidable irrationality in cases such as Buridan's Ass.

The correct response to this objection is to reject the principle connecting intention and intentional action, i.e., to reject SIP. It's not true that if one ϕ s intentionally at some time t , then at t , one's intention to ϕ is stronger than each of one's other intentions at t . A simple counterexample shows this: An agent can simultaneously intend to finish her book manuscript to a very high degree, intend to finish watching the last season of *The Wire* to a somewhat lower degree, and intentionally do the latter rather than the former (perhaps through weakness of will). To put the point differently, SIP wrongly entails that if an agent has a stronger intention to finish her book manuscript than to watch *The Wire* tonight, then her watching of the *The Wire* could not be something she does *intentionally*.¹⁶

So SIP is subject to straightforward counterexamples. Why, then, might it seem so plausible at first sight? The answer, we submit, is that SIP is easily confused with a true principle in its vicinity, namely:

Stronger Motivation Principle (SMP): If one ϕ s intentionally at some time t , then at t the degree of one's motivation to ϕ is necessarily higher than the degree of each of one's competing motivations at t , where competing motivations are motivations to perform actions that cannot be performed simultaneously.

SMP states a truism about the connection between the degree to which agents are motivated to do certain things and what, as a matter of fact, they do.¹⁷ However, the objection considered above does not go through given this principle, since the fact that an agent is most motivated to do something clearly does not imply that she most strongly

¹⁶It would instead be something the agent does unintentionally or non-intentionally. See Chan (1995) for a proposed distinction between unintentional and non-intentional actions. It does not matter for the argument here whether there is such a distinction, since it is sufficiently implausible that the agent would necessarily watch *The Wire* either unintentionally or non-intentionally.

¹⁷Indeed, it may well be plausible to define 'motivation' such that SMP becomes a conceptual truth. For discussion, see McCann (1995).

intends it. To illustrate, an addict may have a stronger *intention* to resist her addiction, and yet be more strongly *motivated* to sate her addiction, which causes her to relapse. Of course, things could happen otherwise: it may be that the addict in fact more strongly – perhaps because of some irrationality – intends to sate her addiction. The point here is simply that it *needn't* be like this: sometimes, agents do otherwise than what they most strongly intend to do. But *something* clearly causes them to act in the particular way they do act, viz. their motivations. It is the possibility of the latter sort of cases – failures to do what one most strongly intends to do, because one's motivations don't line up with one's intentions – that militates in favor of keeping motivation and intention separate in theorizing about agents' cognitive economies. Indeed, the literature on intention and motivation appears to reflect this, for the claim that motivations and intentions are distinct and separable mental states is a familiar and uncontroversial point.¹⁸

In sum, then, we should reject the principle connecting intention and intentional action, viz. SIP, *regardless* of our acceptance of ISR. SIP is subject to clear and straightforward counterexamples, and its apparent plausibility is due to a confusion between the degree of one's *intention* to perform an action and the degree to which one is *motivated* to perform that action.

5. Remaining Asymmetries? First Pass: Full Belief and Full Intention

In the remaining three sections, we consider three final objections to the Parity Account. Rather than rejecting ISR, these objections grant the symmetry between rational belief and rational intention, but argue that this symmetry does not eliminate the asymmetry between epistemic and practical rationality. The first objection claims that while BSR and ISR establish a symmetry between rational *degrees* of belief and intention respectively, there remains an asymmetry between *full* belief and *full* intention. The idea is that if one has equally strong reasons for believing P and for believing a competing proposition Q , it will always be irrational to fully believe P . By contrast, the objection goes, if one has equally strong reasons for intending to ϕ and for intending a competing action ψ , it is *not* always irrational to fully intend to ϕ .

It is not clear to us that we should accept the objection's last claim, viz. that it could be rational to fully intend something when one's reasons are equally strong for a competing intention. Nevertheless, we grant that claim for the sake of the argument, and more generally grant that there is an asymmetry between rational full belief and

¹⁸For one especially clear statement of this idea, see Bratman (1984, esp. pp 393 and following). Even accounts of intention according to which intention partly comprises some motivational state, e.g., desire, do not simply identify the strength of intention with the strength of that state. See, for instance, Sinhababu (2013). For an independent argument that such accounts should not identify the two, see McCann (1995). Note that this response to the problem does not rely on any particular account of what agential motivation amounts to, only on the claim that it should not be identified with agential intention.

rational full intention in this respect. However, we deny that this asymmetry amounts to an asymmetry between epistemic and practical rationality. Let us explain.

The Parity Account involves a commitment to the Gradability Thesis, according to which belief and intention are both inherently gradable states. On this view, full beliefs and full intentions are both wholly reducible to contextually-determined sets of degrees of belief and intention, respectively. Put differently, full beliefs and full intentions are nothing over and above (contextually-determined) sets of graded states. Accordingly, there can be no normative principles governing such states over and above those that govern the underlying graded states. Once we've fixed the principles governing degrees of belief and intention, there are simply no further demands of rationality to be found. It follows that if there is symmetry in the rational demands on degrees of belief and intention (which is what the current objection grants), there can be no remaining asymmetry between the normative principles governing belief and intention, respectively.

How then would the alleged asymmetry between rational full belief and rational full intention arise in the first place? The answer must be that, for whatever reason, our folk concepts of full belief and full intention refer to somewhat different sets of degrees of belief and intention. For example, perhaps our folk concept of full belief tends to refer to a relatively small interval of degrees of belief at the upper end of the belief-spectrum, whereas our folk concept of full intention tends to refer to a somewhat larger interval at the upper end of the intention-spectrum. While we doubt that there is any such robust difference between these two folk concepts, our point now is that such a difference in our folk concepts would have no bearing on the issue of whether there is any asymmetry in the normative principles governing belief and intention. This is because the underlying mental states – the states to which our folk concepts would refer in their crude and contextually-determined manner – would still be governed by perfectly symmetric normative principles, viz. BSR and ISR.

6. *Remaining Asymmetries? Second Pass: Belief and Action*

Let's turn then to a second objection alleging that there is a remaining asymmetry between epistemic and practical rationality. This objection claims that since the view on offer here grants that BSR is true and ASR is false, it still entails an asymmetry between rational belief and rational action. Thus, the objection goes, the asymmetry between epistemic and practical rationality has not been eliminated but instead merely relocated.

In response to this objection, note first that although the Parity Account entails an asymmetry between rational belief and rational action (in that BSR is true while ASR is false), it entails precisely the *same* asymmetry between rational *intention* and rational action (in that ISR is true while ASR is false). This latter asymmetry cannot be explained by an asymmetry between epistemic and practical rationality as such, since

intentions and actions both fall within the domain of practical rationality. Indeed, there is a plausible explanation of the asymmetry between rational belief and rational action that applies equally to the asymmetry between rational intention and rational action.

This explanation begins by noting that actions are not the sort of things that can be distributed among a set of mutually exclusive options in proportion to the strength of one's reasons. One simply cannot perform one action to some (non-zero) extent and simultaneously perform another, incompatible action to some (non-zero) extent. By contrast, both beliefs and intentions can be distributed among mutually exclusive options in this way, in that one can have a (non-zero) degree of belief in two incompatible propositions P and Q and a (non-zero) degree of intention to perform two incompatible courses of actions ϕ and ψ .

This is important since Buridan's Ass, and other cases like it, are precisely the sorts of cases in which it is rational to place a (non-zero) degree of belief and intention in two incompatible options.¹⁹ In particular, we have argued that it is rational to place an *equal* degree of belief and intention in each option in Buridan's Ass (and other cases in which the reasons for two or more mutually exclusive options, be they epistemic or practical, are equally strong). But there is simply no such thing as performing two mutually exclusive actions to an equal (non-zero) degree. In Buridan's Ass, for example, the ass cannot simultaneously go to both bundles of hay; and, furthermore, the ass cannot 'split the difference' and somehow go to both bundles equally, i.e. to the same degree. In short, the logic of action itself precludes any possibility of one's actions reflecting the weight of reasons in the way they can do with regard to belief and intention.

This fundamental difference between the structure of belief and intention on the one hand, and action on the other hand, by itself suggests that action will not be governed by the same sorts of norms as belief and intention. So here we have at least the beginning of an explanation of the fact that ASR is false while BSR and ISR are both true. But let's push further. Given a set of mutually exclusive and jointly exhaustive possible actions, an agent cannot but perform exactly one of those actions, leaving all other possible actions unperformed. As we have noted, it is also impossible for the agent to somehow 'split the difference' with regard to action by performing two or more mutually exclusive actions to an equal extent. Now, given the principle that it must be possible to do what one is rationally required to do (i.e. that 'rationally required' implies 'can'), this entails that an agent cannot be rationally required to achieve such an impossible feat.²⁰ That

¹⁹As noted in §2, it would also be rational to lack any degree of intention or belief in either or both options. In what follows, we focus on cases in which the agent does have some degree of intention or belief in both of the relevant options.

²⁰Indeed, note that the type of 'splitting the difference' between two incompatible actions that would be required is not merely metaphysically impossible, but also conceptually impossible. After all, as we've noted, action is just not the sort of thing that can be distributed or 'split' into two or more equal portions. Hence rejecting this entailment requires that one rejects the principle that rational agents can only be required to do things that are conceptually possible.

is, it cannot be a requirement of rationality that an agent's action be equally distributed among two incompatible options when reasons for each are equally strong in the way it can be a requirement that her beliefs and intentions should be so distributed, as BSR and ISR say they must.

Let's spell out the reasoning here by returning to Buridan's Ass. The ass can be described as facing a choice between three mutually exclusive and jointly exhaustive possible actions, viz. going to the bundle on the left, going to the bundle on the right, and going to neither bundle. Formally:²¹

$$(1) \neg\text{Can}[\neg\text{Left} \wedge \neg\text{Right} \wedge \neg\text{Neither}]$$

We now invoke the principle that 'rationally required' implies 'can':

$$(2) \text{RR}[\phi] \rightarrow \text{Can}[\phi]$$

From these, we can derive:

$$(3) \neg\text{RR}[\neg\text{Left} \wedge \neg\text{Right} \wedge \neg\text{Neither}]$$

In other words, it's not rationally required that [the ass not go left *and* not go right *and* not go to neither]. By DeMorgan's law, we now get:

$$\neg\text{RR}\neg[\text{Left} \vee \text{Right} \vee \text{Neither}]$$

Now, 'rationally required' and 'rationally permitted' are interdefinable. In particular, if you're *not rationally required* to do something, then you're *rationally permitted not* to do it. Thus we have (where 'RP' stands for 'rationally permitted,' and eliminating negation):

$$(4) \text{RP}[\text{Left} \vee \text{Right} \vee \text{Neither}]$$

Rational permission distributes over disjunction, so that if you're rationally permitted to do a disjunction of things, you're rationally permitted to do each of those things:

$$(5) \text{RP}[\text{Left}] \vee \text{RP}[\text{Right}] \vee \text{RP}[\text{Neither}]$$

Of course, it clearly would not be rational for the hungry ass to go to neither bundle, i.e., $\neg\text{RP}[\text{Neither}]$, since it would thus eventually starve to death. Assuming that these actions exhaust the ass's options, this means that it must be rational for the ass to go to one of the two bundles, i.e., $\text{RP}[\text{Left}] \vee \text{RP}[\text{Right}]$. This suffices to explain why ASR is false in this case, implying as it does that the ass is not rationally permitted to go

Here, we appeal to the principle of 'rationally required implies can' rather than the more familiar 'ought implies can' to avoid committing on issues about how general rational requirements, such as those expressed by ASR, BSR, and ISR, are related to specific sorts of obligation. For more on this issue, see Wedgwood (2013).

²¹In what follows, we're assuming a standard KD deontic logic.

to either bundle. When it comes to belief and intention, by contrast, the ass has the option of distributing its beliefs and intentions equally over the options available to it. For this reason, there is no true analogue of premise (1) for either belief or intention. As a consequence, BSR and ISR are not similarly ruled out by the principle that ‘rationally required’ implies ‘can’. Since the ass *can* distribute its beliefs and intentions equally over options that are supported by equally strong reasons, the ass need not be rationally permitted to discriminate in favor of one of these options in its beliefs and intentions.²²

In sum, then, the explanation for the fact that ASR is false given that BSR and ISR are both true is that since there is no such thing as performing two actions equally, rationality cannot require that we do any such thing. By contrast, since both beliefs and intentions can be equally distributed in the relevant sense, rationality may require that we do so in some cases. Importantly, this explains the asymmetry between rational action and rational belief not in terms of an asymmetry between epistemic and practical rationality as such, but rather in terms of a difference between the nature of beliefs and actions, viz., that the former can be equally distributed whereas the latter cannot. Of course, exactly the same difference holds between the nature of intentions and actions, which explains the corresponding asymmetry between rational intentions and rational actions. Thus, this provides for a unified explanation of the two asymmetries between rational actions and rational beliefs/intentions.

7. Remaining Asymmetries? Third Pass: Requirements of Rationality

Finally, we now turn to a third objection to the Parity Account on the basis of an alleged remaining asymmetry between practical and epistemic rationality in Buridan’s Ass-style cases. Above we assumed that it would be irrational for the hungry ass to go to neither of the two bundles. But what makes this course of action irrational? Presumably, this should be explained in terms of some further requirement of rationality. Since that requirement would then apply to something that is clearly in the domain of practical rationality, viz. action, it seems we must accept a requirement of practical rationality with no obvious parallel in the epistemic domain. Thus, the objection concludes, there is an important structural difference between practical and epistemic rationality after all.²³

Our response is to reject the idea that the requirement that explains the irrationality of the ass’s going to neither bundle is specific to practical rationality. As we noted above,

²²Note that this explanation of the fact that ASR is false given that both BSR and ISR are true is not meant to stand as an independent argument in favor of ISR (or, for that matter, BSR). Instead, it’s only meant to show that the proponent of ISR can explain away – by appeal, roughly, to the principle that ‘rationally required’ implies ‘can’ – what might otherwise look like a remaining, puzzling asymmetry between epistemic and practical rationality.

²³We are very grateful to a reviewer for this journal for presenting us with a version of this worry and for pressing us on this issue.

the immediate practical reason why it would be irrational for the ass to go to neither bundle is that it would starve to death, which is clearly worse for the ass than eating either of the two bundles of hay. The requirement of (practical) rationality at work here is thus simply that it's always irrational to perform an action ϕ when it's possible to perform a *strictly better* alternative action ψ , i.e. when one has stronger practical reasons to ψ than to ϕ . This requirement, which mirrors familiar dominance principles from decision theory, and which we may call the *practical domination principle*, is so plausible that it may seem utterly trivial. However, note that nothing more is required to explain the irrationality of the ass standing halfway between the two bundles without going to either one, since just as going to either bundle constitutes a possible course of action for the ass, so too does remaining motionless constitute a possible course of action.

Now, although this practical domination principle is indeed a requirement of *practical* rationality, there is an analogous requirement of *epistemic* rationality. Namely, that it's always irrational to have an epistemic attitude D (to some proposition P) when it's possible to have a strictly better alternative attitude D^* (to P), i.e. when one has stronger epistemic reasons to have D^* than D (to P). For example, if one has strictly stronger epistemic reasons to have a credence of .7 rather than .6 in a proposition P , then one should not have a .6 credence in P . Call this the *epistemic domination principle*. Again, the principle is so plausible that it runs the risk of being considered trivial, but its truth (together with that of the practical domination principle) shows that there is no asymmetry between practical and epistemic rationality in the relevant respect. Specifically, the only requirement of practical rationality needed to explain the irrationality of the ass's inactivity in Buridan's Ass-style cases is one that has a clear analogue in the domain of epistemic rationality.²⁴

One final remark before concluding. Suppose one doesn't accept this line of argument, and is still inclined to think that there is a sense in which something in the practical domain, viz. action, is governed by a different kind of requirement than something in the epistemic domain, viz. belief. What follows? We still do not think it follows that there would be an asymmetry between epistemic and practical rationality *per se*. For, as we discussed in the last section (§6), action is a very different kind of thing than belief. In order to show that practical rationality and epistemic rationality *per se* were different, one would need to point to *similar kinds of things* in each domain and show that *these very things* were governed by different kinds of rational requirements.

An analogy might help make the point. Suppose in conversation a friend, Kim, claims that the requirements of "sportsmanship" are asymmetric in, say, track and field and

²⁴It's worth noting that the two requirements invoked here – i.e. the practical and epistemic domination principles – can in turn be unified under a single *generalized domination principle*: It's always irrational to choose an option X when it's possible to choose a strictly better alternative Y, i.e. when one has stronger X/Y-relevant reasons to choose Y than X.

in soccer. Suppose, as evidence for this claim, Kim points out that only in soccer is it considered sportsmanlike to kick the ball out of bounds when a player of the opposing team is injured, and that there's no corresponding conduct considered sportsmanlike to be found in track and field. This would clearly not be good evidence for Kim's claim that the requirements of sportsmanship are asymmetric between the two sports. Why not? Because, in the case of track and field, *there are no balls that can be kicked out of bounds*; so, it's not at all surprising that there is a difference when it comes to what sportsmanship in each domain *amounts to*. But this fact, that sportsmanship manifests itself differently in each domain depending on the materials it has to work on, doesn't tell us anything about whether sportsmanship *per se* is fundamentally different in each domain.

In our view, we find ourselves in a similar situation with respect to action and belief. We've just argued that, as a matter of fact, action and belief are governed by symmetrical rational requirements in the case at issue, viz. the practical and epistemic dominance principles. But even if one doesn't accept this argument, it's not sufficient to undermine the symmetry between epistemic and practical rationality to point out that what counts as rationality in action sometimes differs in interesting ways from what counts as rationality in belief. As we saw in the last section, the two are structurally quite different kinds of things – for instance, one can be distributed between mutually exclusive options, the other can't. One is soccer, the other track. What would undermine our argument for symmetry in Buridan's Ass-style cases is evidence that there are structural differences between those requirements of practical and epistemic rationality that govern corresponding or analogous phenomena within each domain. While we cannot rule out that evidence of such structural differences will eventually be found, we have not yet seen anything that suggests such evidence will be forthcoming.

8. Conclusion

According to the Parity Account, the asymmetry between epistemic and practical rationality is only apparent. In the epistemic domain, a higher degree of belief in P than Q rationally requires a stronger epistemic reason to believe P than to believe Q . Correspondingly, in the practical domain, a higher degree of intention to ϕ than ψ requires a stronger practical reason to intend to ϕ than intend to ψ . Since the analogue of belief is not action but intention, this eliminates the apparent asymmetry between epistemic and practical rationality.

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