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S.I.: KNOWLEDGE, VIRTUE AND ACTION

Skilful reflection as a master virtue

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Abstract This paper advances the claim that skilful reflection is a master virtue in that skilful reflection shapes and corrects the other epistemic and intellectual virtues. We make the case that skilful reflection does this with both competence-based epistemic virtues and character-based intellectual virtues. In making the case that skilful reflection is a master virtue, we identify the roots of ideas central to our thesis in Confucian philosophy. In particular, we discuss the Confucian conception of reflection, as well as different levels of epistemic virtue. Next we set out the Dual Process Hypothesis of Reflection, which provides an explanation of the workings of reflection in relation to Type 1 and Type 2 cognitive processes. In particular, we flag how repetition of Type 2 processes may eventually shape Type 1 processes and produce what we call downstream reflection. We distinguish competence-based epistemic virtues from character-based intellectual virtues. We also explain how our metacognition account of reflection, drawing on a Confucian conception of reflection and the Dual Process Hypothesis of Reflection, explains skilful reflection as a master virtue. Finally we outline an application of our metacognition account of reflection to a current debate in epistemology.

Keywords Virtue epistemology · Reflection · Confucius

1 Introduction

Reflection plays a central role in our epistemic lives and yet there has been relatively little investigation into the nature of reflection and its precise epistemic significance

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by epistemologists.[1] This paper goes some way to redressing this. We set out our metacognition account of reflection, which is based on a Confucian conception of reflection as well as the Dual Process Hypothesis of Reflection.[2] Having set out the theory, we focus on the role of skilful reflection as, what we call, a master virtue.

It's our position that while there are competences that directly enable the gaining of true beliefs and so promote learning, there are also other competences that allow us to develop further competences. It is through such competences that we learn some of the competences that directly enable the gaining of true beliefs. Skilful reflection is a competence that we learn on the basis of other competences, and it is a competence that can allow us to directly gain true beliefs and to develop further competences. This isn't, however, the full story. The virtue of skilful reflection draws on competence-based virtues and character-based virtues.[3] What's more, it's also our position that skilful reflection is a master virtue in so far as it shapes and corrects the other virtues. Having developed our account of skilful reflection as a master virtue, we show how that account is equipped to deal with two cases that have proven to be particularly troublesome for virtue epistemology to handle.

2 The Confucian conception of reflection

Our account of skilful reflection is based in part on an interpretation of discussions of reflection in the *Analects* and *The Great Learning*. The purpose of this paper isn't, however, to propound a particular interpretation of reflection ahead of other interpretations of those texts. Rather, our purpose is to make the case that reflection plays a particular epistemic role as a master virtue. Making this case depends on our particular account of reflection and that account of reflection is informed by our reading of reflection in the *Analects* and *The Great Learning*. It is therefore appropriate to detail this reading of those texts.

The *Analects of Confucius* presents us with a conception of reflection with two components, a retrospective component and a perspective component. (Mi 2015; Mi and Ryan 2016; Ryan and Mi forthcoming). The former component involves hindsight or careful examination of the past and as such draws on previous learning and previously formed beliefs to avoid error. The latter component is foresight, or forward looking, and as such looks to existing beliefs and factors in order to achieve knowledge.[4] "省" is the word for the retrospective component and "思" is the word for the perspective component.[5]

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[1] A notable exception to this is the work of Sosa (2011, 2012, 2014, 2015).

[2] Our discussion of metacognition is grounded in epistemological concerns. We're not attempting to stake out a position in philosophy of mind. For the latter sort of position, see Proust (2013), who draws on psychology and neuroscience to develop an account of metacognition.

[3] This maps onto the faculty and trait distinction in the virtue epistemology literature, such as in Greco and Turri (2011).

[4] "Perspective" rather than "prospective" is chosen so as to indicate the progression from and completion of Sosa's (1991) own position on reflection.

[5] In fact, it's our position that the retrospective component provides for sensitive beliefs, while the perspective component provides for safe beliefs.

Confucius identifies a particular relationship between reflection and learning. In the *Analects* Confucius is recorded as saying that "[l]earning without thought is labour lost; thought without learning is perilous".[6] (Analects 2009, "Wei Zheng": 15). Without learning, many desirable qualities of character or performance, moral as well as intellectual, will become defective.[7] Confucius gives six examples of the flaws that result from supposedly good qualities when combined with a lack of effort at learning.[8] Our view, in line with the view quoted above, is discussed later in the paper.

In *The Great Learning*, another canonical text in the Confucian tradition, there is both a discussion regarding reflection and "extended knowledge": "The way of great learning consists in manifesting the manifestation of virtues, in reaching out to others, in achieving ultimate goods". (Analects 2009). Great learning is achieved by an individual agent manifesting requisite virtues and the whole world manifesting those virtues. The themes of *The Great Learning*, as indicated by the foregoing is second-order virtue, particularly reflection, and the processes of great learning, which involves cooperation with others to achieve important epistemic ends—particularly "extended knowledge", among other ends, and for which reflection is necessary. (Mi and Ryan forthcoming).[9]

Both *The Great Learning* and Ernest Sosa identify four levels of virtue. Sosa categorises these four talks as The Primary Level—seat, shape, and situation competences are all satisfied and so animal knowledge is possible; The Secondary Level—risk assessment is competently undertaken which allows for reflective knowledge; The Tertiary Level—this level involves virtue that encourages the acquisition and sustainment of primary and secondary levels of virtue; The Quaternary Level—selecting what is of appropriate value for the application of virtues.[10]

According to *The Great Learning* four levels of virtue must be manifest at both the individual and collective level in order for great learning to take place. While Sosa's own four levels of virtue has influenced our particular interpretation of the text, we believe that our interpretation of the four levels of virtue is in harmony

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[6] All translations, except Analects (2016), are the authors' own.

[7] We can imagine the agent who just learns from others without reflection on her learning to be unable to act independently and appropriately in novel situations. The agent who just thinks but doesn't learn is in danger of missing out on the accumulated wisdom of others and is susceptible to going very wrong.

[8] The examples are as follows: "If you love being kind to others, but don't like to study, then your kindness will be distorted into simplicity. If you love wisdom, but don't like to study, then your wisdom will be distorted into aimlessness. If you love trustworthiness, but don't like to study, then your trust will be distorted into harm. If you love candor, but don't like to study, your candor will be distorted into rudeness. If you love boldness, but don't like to study, your boldness will be distorted into unruliness. If you love persistence, but don't like to study, your persistence will be distorted into rashness" (Analects 2016).

[9] Our aim in this paper is not to provide a definitive defence of these interpretations of the *Analects of Confucius* or *The Great Learning*. Rather we're providing background to the conception of skilful reflection as a master virtue. For further discussion of the interpretation of *Analects of Confucius*, see Mi (2015) and Mi and Ryan (2016, forthcoming), and for textual evidence in support of the interpretation, see *Analects* (2009, "Xue Er": 4, "Gong Ye Chang": 20, "Li Ren":17).

[10] Sosa provided this taxonomy to Chienkuo Mi in personal communications.

with the rest of the text.[11] First Level—Attainment Virtue: This is the sort of virtue that is sufficient for the attainment of some basic goods such as true belief and/or animal knowledge. Such a virtue may operate and have always operated at an entirely sub-personal. Second Level—Achievement Virtue: This virtue is such as to allow a success because of reflection to be reckoned an achievement. In order words, an agent who has such a success deserves credit. This is in contrast to success because of Attainment Virtue. Achievement Virtue therefore requires personal level involvement at least somewhere along the line. Third Level—Intellectual Character Virtue: This virtue maps closely onto how intellectual character-based virtues have been described in the virtue responsibilist literature. In order to sustain the prior two sorts of virtues, this virtue, particularly epistemic humility, is required. Fourth Level—Meta-Character Virtue: This virtue selects appropriate value-based responses in a given situation. The virtue will help determine whether, for example, a situation calls for intellectual engagement or not, whether one should act on moral or prudential considerations in a given situation. Again, the point here isn't to provide the definitive interpretation of a Confucian text, rather it is the scholarly task of identifying the intellectual source for the theory of reflection that we develop in this paper.

3 The dual process hypothesis of reflection

While in this paper we develop our account of skilful reflection as a master virtue, elsewhere, we have developed our Dual Process Hypothesis of Reflection, as well as our account of skilful reflection as an epistemic virtue. (Mi and Ryan 2016, forthcoming). Owing the centrality of the Dual Process Hypothesis of Reflection to the account of skilful reflection as a master virtue, we summarise the hypothesis below.

On this account, following Dewey (1933, p. 9), reflection is understood as "active, persistent, and careful consideration".[12] The Dual Process Hypothesis of reflection is a hypothesis of how reflection works. The hypothesis draws on dual process theory, according to which there are Type 1 processes which are intuitive and automatic and Type 2 processes which are reflective and effortful. (Evans 2008, 2014). Here elements of that hypothesis will be highlighted in order to support later argumentation that skilful reflection unifies competence and character virtues.[13]

While reflection primarily involves Type 2 processes, there is important interplay between the two types of processes. Type 1 processes generally explain why we start to reflect when we do.[14] (Evans and Stanovich 2013, pp. 236–237). While Type 1 processes play a role in alerting us to reflect, they also supply the reflecting agent with relevant memories, associations, ideas, and hunches, which can inform that reflection.

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[11]   The following passage sets out the individual level of the four levels of virtue: 古之欲明明德於天下者，先治其國，欲治其國者，先齊其家，欲齊其家者，先修其身。欲修其身者，先正其心。欲正其心者，先誠其意。欲誠其意者，先致其知，致知在格物。 (Analects 2009).

[12]   We take this to be a characterisation of refection: a set of jointly sufficient conditions for reflection.

[13]   For a full examination of the dual process hypothesis of reflection, see Mi and Ryan (2016).

[14]   Evans and Stanovich (2013, pp. 236–237) favour what they call "default interventionism". According to the authors, the evidence supports the view that when an agent feels confident about an initial (Type 1)

The way Type 1 processes work can be expected to have an effect on the quality of reflection undertaken. If relevant memories don't come to mind, then the reflection, at least in one respect, won't be as good as reflection where relevant memories do come to mind. Type 1 processes, which in turn bear on the quality of instances of reflection, are constituted by native and learnt cognitive processes. (Hogarth 2001, 2005). Repeated training of what starts out as a reflective process may, for example, result in a Type 1 process. A cognitive performance needed to complete some task that started out as slow and effortful may, after sufficient repetition, become quick and automatic. We refer to such quick and automatic responses as downstream reflection.

It's to be expected that instances of reflection may be of better or worse quality depending on a range of factors, such as the habits of the agent's mind, or dispositions, and the agent's native responses. Higher quality reflection or more skilful reflection is the result of habits of mind and native responses that are epistemically virtuous. Such higher quality reflection produces more positive epistemic standings, than lower quality reflection that is the result of vicious habits of mind, vicious native responses, or both. Imagine an agent who, for example, reflects on whether to trust a testifier in an important but contentious matter. Let's suppose his reflection is guided by accurate memories of the testifier's previous testimony, and who possesses the virtues of open-mindedness and intellectual courage. Now imagine another agent who reflects on the same matter. Let's suppose his memory is inaccurate, and he is of a closed minded and intellectually cowardly character. We have good reason to expect that the reflection of the first agent in this matter is superior to that of the second agent.

Reflection bears on metacognition.[15] We predict that generally second-order cognitive processes involve Type 2 processes. Second-order processes are processes used in a meta-stance. This is a stance, which may be a belief, judgement, doubt, and so on, about a first-order stance. Such meta-stances typically involve reasoning, and as such involve processes that are effortful and slow. That meta-stances involve Type 2 processes is plausible given that meta-stances entail mental activity, stances about other stances, associated with humans and not non-human animals. This is mental activity that non-human animals generally seem to be incapable of and our prediction explains this incapacity—non-human animals don't possess the cognitive tools, Type 2 processes, generally required for such activity. Sometimes, of course, meta-stances are arrived at very quickly and aren't effortful. In such cases, Type 1 processes that have been shaped or trained by Type 2 processes are often in play.

Footnote 14 continued

response, they're less likely to reflect on that response. On their view, intervention (Type 2) will only occur "when difficulty, novelty, and motivation combine".

[15]   Later we discuss how downstream reflection plays a crucial role in our metacognition account of reflection.

4 Competence and character virtues

Virtue epistemological approaches are typically categorised as virtue reliabilist approaches, according to which virtues are competence-based, or virtue responsibilist approaches, according to which virtues are character-based.[16] Philosophers taking one of the two approaches in virtue epistemology in general tend not to say much about the other.[17] In this paper we're going to treat both as virtues. We regard both as being of epistemological significance and will treat both as virtues, albeit of different sorts, for the purposes of this paper.

Competence-based virtues include perception, introspection, memory, and reasoning. The agent who believes reliably by perception, introspection, and so on, is held to believe competently so far as so believing reliably provides the agent with true beliefs. These virtues may be regarded as uncultivated competences in that they are virtues that many people have without any special effort. While many people have such competences, the excellence of such competences may differ from person to person. Some who have perceptual competence will have that competence to a greater degree than others who have that competence. For example, one agent's visual perception of distant objects may be more acute than another agent's visual perception, though the second agent's visual perception may still rightly be regarded as reliable.

Competence-based virtues may also include competences that are unlike the competences described above. There are competences that are cultivated, some of which may be quite common, some of which may not be quite common. For example, owing to mathematical education, it is now quite common for people to be competent in dividing one large number by another large number. There are other competences that are, however, much less common. A number of agents have developed the competence to identify bird species on the basis of very little visual and aural information. There are many such competences we acquire through learning.

Standard character-based epistemic virtues include open-mindedness, intellectual courage, intellectual conscientiousness, and intellectual humility (Roberts and Wood 2009; Baehr 2012). Here a distinction between cultivated and non-cultivated virtues is more controversial. Plausibly these are all character traits that require learning and practice before they develop into virtues. The open-minded person, perhaps learning from an exemplar with this trait, will have learnt when open-mindedness is called for and how far open-mindedness goes. The same point is apt for the other character-based virtues. In other words, we also learn when and how to apply those character-based virtues

There may, however, be uncultivated character-based virtues that require no such learning. Curiosity may be one such character-based virtue (Slote 2016). Certainly, curiosity is a character trait that seems to be common in young children—young children don't seem to learn curiosity. It is also epistemically appropriate for young children to be curious. Given the kind of beings that they are, beings with little expe-

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[16] An exception to this taxonomy is provided by Battaly (2016), who includes personalism, alongside reliabilism and responsibilism as virtue approaches in epistemology.

[17] For discussion of the relationship between the two approaches, as well as how other philosophers have seen the relationship, see Sosa (2015).

rience and knowledge of the world, having curiosity as a character trait is beneficial to them as epistemic agents.[18]

So far we've identified various virtues, both competence-based virtues and character-based virtues, that are uncultivated and cultivated. While there are competence-based virtues that directly enable the reliable gaining of true beliefs, for example perception, and so promote learning, there are also competence-based virtues and character-based virtues that allow us to develop further competences. For example, the birdwatcher's competence at identifying birds plausibly depends on competence-based virtues such as visual perception, aural perception, inferential reasoning, and, perhaps in difficult cases, character-based virtues such as open-mindedness and intellectual conscientiousness. It's plausible that reaching the level of a competence-based virtue at identifying birds, of the sort typical of the seasoned birdwatcher, would require lots of practice involving perception, inference, as well as depend on intellectual tenacity, intellectual humility and other character-based virtues.

5 Reflection as a master virtue

In Sect. 3 we outlined the Dual Process Hypothesis of Reflection. According to the hypothesis, both Type 1 and Type 2 processes are involved in reflection. While we don't take reflection itself to be a virtue, we outlined the way in which other virtues may play a role, via Type 1 and Type 2 processes in determining whether reflection is skilful. Type 1 processes provide stimuli for reflection and the habits of mind that inform the execution of reflection. Undertaking reflection, which involves "active, persistent, and careful consideration", requires Type 2 processes.

Skilful reflection then, differs from mere reflection in so far as the processes that inform skilful reflection are epistemically good processes. For example, skilful reflection requires competence-based virtues and character-based virtues, as stimuli and habits of mind will bear on the epistemic quality of reflection. More specifically, competence-based virtues enable the epistemic quality of reflection to be good in a substantive way—those virtues allow for reflection to be informed by truth conducive cognitive process and so enable reflection to be a truth conducive cognitive process. On the other hand, character-based virtues enable the epistemic quality of reflection to be good in a formal way—those virtues are conducive to reflection involving good reasoning. It's plausible, for example, that an open-minded person will consider a wide variety of relevant perspectives on an issue, not just a narrow few that ultimately conform to her own perspective.[19]

While there are a variety of background processes in play in the operation of reflection, reflection itself is not a reactive process as is plain from its characterisation as articulated by Dewey. Whether reflection in a particular instance is skilful or not will

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[18] One way of thinking of the curiosity of young children is to see it as the manifestation of a natural desire for truth. For more on the natural desire for truth, as well as natural desires generally, see Zagzebski (2012).

[19] As a character-based virtue, skilful reflection is not merely a competence that may be employed. Rather, an agent with the virtue of skilful reflection is one who is disposed to reflect. As we shall see, skilful reflection as a master virtue is both competence-based and character-based.

depend on the actual active, persistent, and careful consideration that is undertaken in that instance. If an agent's processes that provide stimuli for reflection, their perceptions, memories, and so on, arise from competence-based virtues, if their habits of mind encourage taking epistemically good steps, if the actual steps taken in an instance of reflection are good, then, and only then, does an agent exercise the virtue of skilful reflection.[20]

This, however, isn't the end of the story. As we can see, skilful reflection is both competence-based and character-based. This distinguishes reflection from the other virtues that have been described in the literature on virtues. Aside from the virtue of skilful reflection playing a role in epistemically good belief formation. The virtue also has a role to play in providing Type 2 process feedback for Type 1 processes. In fact, the virtue of skilful reflection plays a feedback role in honing both competence-based virtues and character-based virtues and endorsing or otherwise the output of those virtues. It's this feature that makes the virtue of skilful reflection a master virtue rather than a mere virtue. The virtue has an authority in this respect over all the other epistemic virtues.

To see how this works, let's consider a few examples. First let's consider how reflection can play a feedback role in honing other virtues. Think of a philosophy student who receives feedback on an essay. The good student will reflect on any critical comments of her work. If the student is a skilful reflector, then the stimuli for her reflection feed reliable belief-forming processes and her habits of mind are virtuous. She'll competently read the comments and perhaps try to take on the perspective on the commentator if the point of some of the comments is unclear to her. Her reflection on the critical comments, assuming the critical comments are well-founded and the relevant belief-forming mechanism is not particularly entrenched, can be expected to improve the way she forms her philosophical beliefs in the future. At some point, the lessons learnt from the critical comments will simply be internalised; she won't even need to try to avoid a particular error, say, of reasoning or of perception.

Similarly consider the chess player. It's quite standard for professional chess players to reflect on their completed matches. A significant portion of this reflection will focus on successes and errors. Of course a chess player may make the same sort of error a number of times. The process of reflection, however, allows him to attempt to curtail such errors. Eventually, with experience and reflection, the chess player will simply be able to "see" that a particular move is a mistake or risky and that another move is very promising. Again the lessons learnt through the process of reflection become internalised so as to hone the agent's other cognitive processes, whether they be competence-based or character-based processes.[21]

Now consider an example in which reflection plays a role in the endorsement of a belief. Imagine an agent looks at the Mueller-Lyer illusion. She may initially form

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[20] Note that we don't use the term "the virtue of reflectiveness". This seems appropriate as reflection is more abstract and allows for the possibility that an aspect of the virtue of skilful reflection is reflecting when appropriate and not reflecting when not appropriate.

[21] This is not to say that such processes cannot be honed without reflection. Reward and punishment regimes can be set up by others to train an agent's cognitive responses without relying on that agent's reflection.

the belief that one line is longer than the other. Upon reflection, however, she may not endorse her initial belief due to an awareness that many people are susceptible to illusions when viewing such images. She may reach this judgement without knowing that the image in front of her is actually just such an image.

The role that reflection can play in the endorsement of beliefs is part of the role that reflection plays in metacognition more generally. In the example above the agent realises that there's a feature of her situation that gives cause for extra care in the formation of any relevant beliefs. In the Barney case, a full description of which is provided later, it is just such a failure of metacognition that prompts epistemologists either to deny that the protagonist has knowledge or to say that he only has animal knowledge, or low grade knowledge.

A feature of metacognition is, however, that it may occur in a particular instance without reflection occurring in that particular instance. Just as other cognitive processes may be trained by reflection, metacognition too may be trained by reflection. This means that very quick judgements of metacognition may be made without those judgements qualifying as active, persistent, and careful consideration.[22] Still such judgements may be termed downstream reflection so as to highlight their cognitive origin. Consider again the agent in the Mueller–Lyer case described above. Rather than reflecting on her particular situation, she may simply, and quickly, recognise a feature of her situation is such that she should withhold belief. This downstream feature of reflection with regard to metacognition will be important when we return to the Barney case later.

6 Safety and sensitivity

Epistemologists, at different times, have appealed to sensitivity and safety in an attempt to account for the gap between justified true belief and knowledge. The more recent focus by virtue theorists on reliability has marked an interesting shift away from what was standard. Safety and sensitivity principles are principles the satisfaction of which appear to go beyond the competence of an agent. Pritchard (2010) favours safety, in particular basis safety, as a requirement for knowledge.[23] According to basis safety, a belief is safe if the way the belief has been formed is such that the belief couldn't easily go wrong. Sosa (1999, pp. 376–377) has argued that it's better for a belief to be safe than sensitive.[24] Note that a belief can be safe without that safety being down to an epistemic contribution from the believing agent.

The same can be said of the principle that Sosa argues against. The sensitivity principle requires that one's belief be formed such that were the object of the belief not true, then one wouldn't have formed that belief. (Nozick 1981). For example, if one believes that there is a chair before one, that belief is sensitive if and only if it

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[22] Similarly, the agent who has the virtue of skilful reflection will automatically engage in reflection given relevant cues.

[23] Sosa (2015, p. 72) distinguishes between first-order safety and second-order safety. Sosa's (1991) work, *Knowledge In Perspective*, foreshadows this.

[24] Both conditions have been put forward as requirements for knowledge (Ichikawa and Steup 2014). We're not arguing that the two conditions are necessary for knowledge.

would not have been formed if there had not been a chair in front of one. While it's natural to think that it's an agent's competence that would allow one to have a sensitive belief, just as one might think that one's competence allows for a safe belief, this isn't necessarily the case. Demon cases can be set up to show that both principles can be satisfied without their satisfaction being down to competence. Note also that without a demon guaranteeing the sensitivity of a belief, the sensitivity principle looks too demanding. Beliefs formed on the basis of perceptual experience would go wrong in brain in the vat cases. The sensitivity principle, as articulated above, would require that beliefs formed on the basis of perceptual experience be counted as insensitive.

The requirement that agents form their beliefs based on processes that are reliable is similar to the safety principle.[25] Virtue theorists typically go further than saying that the agent's belief must be formed on the basis of such a process. In addition, virtue theorists require that the process be such so as to constitute a competence or ability. In other words, they require that the process that reliably gives an agent true beliefs be the agent's process. Such competences or abilities fall under the rubric of virtues, hence theorists that defend this view are known as virtue theorists.

Pritchard (2010, p. 81) has argued that such an ability condition is not enough, and that a belief must also be safe. The reliability that follows from an ability condition, given the way that ability is defined, covers almost all the cases with which virtue theorists are concerned, leaving just a few sorts of case, such as the Barney and perhaps the Jenny cases, for safety to help solve.[26] The result is that requiring safety seems somewhat ad hoc.[27]

An alternative to Pritchard's anti-luck virtue epistemology is what Pritchard (2010, 2012) has called robust or strong virtue epistemology. Robust virtue epistemology claims that we can account for all the important cases just by way of an ability condition, there's no need for an independent safety condition. Although this approach has the promise of being theoretically satisfying in its elegance, it seems to fall short in just those cases which Pritchard's safety requirement is able to handle, the Jenny and Barney cases.

Our own approach is one that similarly eschews the use of an independent sensitivity or safety principle to account for cases of knowledge. As with robust virtue reliabilist accounts of knowledge, differences in epistemic attainment, for example, whether knowledge or only justified belief has been achieved, can be explained in terms of differences in the virtue of the agent. This approach goes further than reliabilist accounts that have been offered by Sosa (2011) and Greco (2010), however, in that by providing a more fine grained account of the necessary virtue condition, we are in a position to satisfactorily explain the Barney case and the Jenny case.

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[25] In fact, Palermos (2015) argues that reliability implies safety.

[26] These two cases are also respectively known as the Fake Barn County case and the Chicago Visitor case.

[27] For more on the ad hoc charge, see Greco (2011, p. 227). Pritchard (2012, p. 273) argues for a position whereby both safety and ability are required, though they shouldn't be thought of as conditions that are separate from one another. Rather the view Pritchard offers is: "S knows that p if and only if S's safe true belief that p is the product of her relevant cognitive abilities (such that her safe cognitive success is to a significant degree creditable to her cognitive agency)."

7 The cases

While there hasn't been much discussion of metacognition amongst virtue epistemologists, significant attention is given to the topic by Sosa (2012, 2015).[28] According to Sosa's (2012, 2015) theory of knowledge, an apt belief, a belief that is accurate because adroit (animal knowledge), is completely competent. For a complete competence requirement to be satisfied an agent must be doing well in three respects: constitution (or seat), shape, and situation. Constitution refers to the apparatus involved in gaining knowledge, shape refers to the condition of the agent whose apparatus it is—the agent better not be drunk, asleep, and so on, while situation refers to the environment that the agent is occupying—it better be one in which the agent's competence can be manifest.[29]

Let's consider the Barney case, as described by Pritchard (2012, p. 251)[30]:

> Using his reliable perceptual faculties, Barney non-inferentially forms a true belief that the object in front of him is a barn. Barney is indeed looking at a barn. Unbeknownst to Barney, however, he is in an epistemically unfriendly environment when it comes to making observations of this sort, since most objects that look like barns in these parts are in fact barn façades.

For Sosa, Barney has animal knowledge and so is fully competent though he doesn't have the complete second-order competence necessary for the apt belief to be aptly grasped.[31] By distinguishing animal knowledge (apt belief) from reflective knowledge (apt belief aptly noted as such) and explaining the Barney case as a case of animal knowledge, Sosa provides a position that goes some way to reconciling competing intuitions with regard to the case.[32]

While we concur with much of Sosa's position in this matter, we identify the problem in the Barney case as a failure to manifest a competence of metacognition. Recall the Mueller–Lyer case described previously. The agent recognises, reflectively, or through downstream reflection, that her situation is one in which she should take extra care when forming a belief. Barney's situation is similar. Given his situation, he should take extra care when forming his belief. He isn't, however, aware of this and neither does he manifest the relevant metacompetence for this situation. Certainly Barney is unfortunate. How could he have known that he was in such a situation? This, however, is beside the point—sometimes knowledge, especially reflective knowledge, is hard.[33] That we deny that he has reflective knowledge on the basis of his failure to

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[28] For discussion on Sosa's position, see Mi and Ryan (forthcoming).

[29] For a spelling out of what constitution, shape, and situation involve, see (Sosa 2012, p. 7).

[30] The original barn façade case first appeared in a paper by Goldman (1976). Goldman credits the example to Carl Ginet.

[31] This is owing to his situation. (Sosa 2012, p. 12).

[32] Greco (2010), by arguing that abilities are environment-relative, offers a different way for dealing with Barney-type cases. For criticism of this response, see Ryan (2014).

[33] Exercising the relevant metacognition in a given situation does not imply engaging in a lengthy process of reflection every time one forms a belief. As we have seen, reflection may lead to a metacognition that is immediate.

manifest metacognition does not imply that we think that an agent has to exercise the same carefulness in every situation. Of course, when a situation doesn't call for such carefulness, there is no need to manifest such carefulness.[34]

Now let's consider the Jenny case for a slightly different, though related, point:

> Our protagonist, whom we will call "Jenny", arrives at the train station in Chicago and, wishing to obtain directions to the Sears Tower, approaches the first adult passer-by that she sees. Suppose further that the person that she asks has first-hand knowledge of the area and gives her the directions that she requires. Intuitively, any true belief that Jenny forms on this basis would ordinarily be counted as knowledge. (Pritchard 2010, p. 40).[35]

What is important about this case is that Jenny plausibly is required to exercise a relevant counterfactual sensitivity (Pritchard 2010). For example, were the delivery of the testimony to be relevantly strange, say it is delivered with suppressed sniggers, or were the content strange, as when the testifier tells her to take the next train back to New York, the agent would be appropriately responsive to such factors. Such a responsiveness could involve not believing the testifier. Such a response to the Jenny case is not unique but appears somewhat ad hoc in that we don't get such a diagnosis from virtue epistemologists in other cases.

Our account is different. Our response to the Barney case is in fact equipped to give us a like response to the Jenny case. An important point in the Jenny case is that no such factors that require extra care are present. Of course had such factors been present, then it would have been like the Barney case in that extra care would have been required. As extra care wasn't called for, and so neither was a manifestation of metacompetence required, we can deem the Jenny case a case of knowledge. Thus on our account we have a unified virtue epistemological response to the two problems that appeared to pose distinct challenges to robust virtue epistemology.

8 Conclusion

In this paper we've set out an account of reflection as a master virtue. We've done so by first articulating our Confucian conception of reflection and setting out the Dual Process Hypothesis of Reflection. This has allowed us to make the case that skilful reflection draws on both competence- and character-based virtues. What's more, we've argued that skilful reflection shapes the other virtues and plays a metacognitive role with regard to the other virtues. Finally, we've argued that our account of reflection as a master virtue sheds new light on virtue epistemological accounts of the nature of knowledge. More specifically, we have shown how what had been seen as two cases

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[34] We're not saying that Barney is blameworthy. The point is purely the epistemic point as to what would need to happen in order for Barney to have knowledge. He's not in an environment in which what look like barns are barns, rather he's in an environment in which lots of things that look like barns are actually barn façades.

[35] This example is originally from Jennifer Lackey (2007, p. 352). She used the case to support her claim that we don't deserve credit for everything we know and challenge Greco's virtue epistemology.

pulling virtue epistemological accounts in different directions can in fact be treated in a unified way by our account.

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