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For Philosophia.

# 'WITTGENSTEINIAN ANTI-SCEPTICISM AND EPISTEMIC VERTIGO'

#### Cameron Boult & Duncan Pritchard

University of Edinburgh

ABSTRACT. We offer an overview of what we take to be the main themes in Annalisa Coliva's book, *Moore and Wittgenstein: Scepticism, Certainty and Common Sense*. In particular, we focus on the 'framework reading' that she offers of Wittgenstein's *On Certainty* and its antisceptical implications. While broadly agreeing with the proposal that Coliva puts forward on this score, we do suggest one important supplementation to the view—*viz*;, that this way of dealing with radical scepticism needs to be augmented with an account of the meta-sceptical problem which this proposal generates, which we call *epistemic vertigo*.

KEYWORDS: Moore, G. E.; Reasons; Scepticism; Wittgenstein.

"An admission of some question as to the mystery of existence, or the being, of the world is a serious bond between the teaching of Wittgenstein and that of Heidegger. The bond is one, in particular, which implies a shared view of what I have called the truth of skepticism, or what I might call the moral of skepticism, namely, that the human creature's basis in the world as a whole, its relation to the world as such, is not that of knowing, anyway not what we think of as knowing."

Stanley Cavell, The Claim of Reason: Wittgenstein, Skepticism, Morality, and Tragedy, 241

#### 1. COLIVA ON MOORE AND WITTGENSTEIN

Annalisa Coliva's wonderful book, *Moore and Wittgenstein: Scepticism, Certainty and Common Sense* (Coliva 2010), is a complex and detailed treatment of a variety of interrelated topics on Wittgenstein and Moore and the problem of scepticism. The central focus of the book is the material in the posthumous compilation of Wittgenstein's remarks entitled *On Certainty* [OC]. Coliva aims primarily to understand how Wittgenstein was struck by G.E. Moore's now widely discussed work on the

topic of scepticism. After offering a detailed reading of Moore's papers, 'A Defence of Common Sense' and 'Proof of an External World', among others, Coliva develops a reading of the material in *On Certainty* which amounts to a kind of double-edged critique of Moore and the sceptic. She is committed to staying close to the text and explores a variety of ideas in Wittgenstein that can easily be glossed over when, in contrast to a close exegetical study, the text is mined with the aim of motivating some particular epistemological view (as one finds, to give two prominent examples, in the work of Michael Williams (e.g., 1991) and Crispin Wright (e.g., 2004)). That said, we confine ourselves here to a brief discussion of what strikes us as the central thesis of Coliva's book, the anti-sceptical implications she draws from this, and some of the ways in which she distinguishes her view from related interpretations of Wittgenstein.

Coliva refers to her reading of On Certainty as a 'framework' reading. She tells us that according to Wittgenstein our most basic certainties—such as the kind of 'truisms' cited by Moore (e.g., 'The earth has existed for many years before I was born')—form part of the framework of our practices of empirical investigation. In the literature, these commitments are often described, following Wittgenstein, as 'hinge propositions'. According to Coliva, although hinge propositions have the form of empirical propositions, the role they play in our practices is not that of regular empirical propositions. Contrary to appearances, hinge propositions are not in the business of describing the world, but rather function as 'norms' (or 'rules') implicit in our practices and which make our practices of empirical investigation possible. As a matter of 'logic' we must hold fast to hinge propositions (OC, §342). "For otherwise [...] we would no longer have a system of verification which could speak for or against a given hypothesis, and, with that, we would lose the very notion of epistemic rationality." (Coliva 2010, 126) As such hinge propositions are not themselves in the market for epistemic evaluation. Coliva explains that at the heart of Wittgenstein's critique of both Moore and the sceptic is the claim that they mistakenly subject our most basic certainties to epistemic evaluation—of a kind appropriate for ordinary empirical propositions—in arriving at their respective claims to know and to doubt hinge propositions.

Coliva places this reading within the broader context of the Wittgensteinian idea that words have meaning only within particular language-games. That is to say, there are 'rules' or criteria for the meaningful use of words, criteria that can only be discovered by a 'perspicuous description' of the way in which we (in 'ordinary' life) in fact use a given word. In Chapters 2 and 3, by way of Wittgenstein's perspicuous description of our epistemic language-games, Coliva brings to light the various criteria that govern the meaningful use of 'to know' and 'to doubt'.

Among the rules governing when it is meaningful to say that someone knows that p is that the person who knows that p must be able to offer reasons in favour of p, and that these reasons must themselves be *more* certain than p (Coliva discusses a variety of other criteria). Regarding the rules for the meaningful use of 'to doubt', Coliva says that according to Wittgenstein, one must have *grounds* for some particular doubt that p (among various other criteria). Precisely in virtue of their hinge role, hinge propositions are already more certain than anything we can offer as grounds in favour of them (see, e.g., OC, §125). Thus according to the rules of our epistemic language-games, 'S knows that p' cannot be properly said with regard to a hinge proposition. The rules of our epistemic language-games preclude doubt here as well. For again, given its hinge role, there can be no grounds for doubting a hinge proposition given that such doubt would, so to speak, take those very grounds along with it (see, e.g., OC, §613).

The central idea of the framework reading, then, is that epistemic claims regarding hinge propositions cannot possibly comport with the rules governing our epistemic language-games. This is why, according to Coliva, Wittgenstein thinks of both Moore's and the sceptic's epistemic assessments of hinge propositions as *nonsensical*. But Coliva is sensitive to the controversial nature of the broader claims about meaning within which she situates her framework reading. She addresses this worry by explaining that there are really two ways in which Wittgenstein can claim that the sceptic and Moore are guilty of nonsense. On the one hand, we can understand the accusation of nonsense directly through the thesis about meaning. What, for example, the Moorean says is *meaningless* because it does not comport with the rules of our epistemic language-games. On the other hand, we can understand the accusation of nonsense through considerations about the *logical* role that hinge propositions play in our practices. For example, to doubt hinge propositions, as the sceptic does, is *irrational* in the sense that doing so is tantamount to undermining the very possibility of empirical investigation altogether. Such irrationality, according to Coliva, is a kind of nonsense.

Coliva explicitly develops two anti-sceptical arguments out of her reading of *On Certainty*. She explains how Wittgenstein provides materials to defeat what she calls 'Cartesian Scepticism' as well as 'Humean Scepticism'. We will turn directly to her discussion of the Humean argument, since Coliva herself acknowledges that it is the less controversial of the two, and she claims it has a more general application. Coliva's Humean sceptic states that our everyday empirical assertions depend upon collateral assumptions. For instance, the idea that sense experience is a guide to the way things are in the world is precisely such a collateral assumption (Coliva calls this a 'heavyweight' assumption; she thinks of these assumptions as being expressed by hinge propositions). Coliva's

Humean sceptic claims that in order to know this heavyweight assumption I must know, for example, that I'm not merely dreaming, that my senses aren't in some other way deceiving me, that there is an external world, and so on. But such claims can only be settled by appeal to further claims (say, facts about experiences) that themselves presuppose the heavyweight assumptions.

The anti-sceptical strategy that Coliva employs here falls directly out of her framework reading. She refers to this as Wittgenstein's 'transcendental' anti-sceptical argument. Coliva reminds us that, according to Wittgenstein, it is, as a matter of 'logic', impossible to subject hinge propositions to epistemic assessment in the first place. The commitments which are said (by the Humean sceptic) to underlie the legitimacy of ordinary empirical judgements are not expressed by further empirical judgements, but by hinge propositions, which are altogether different: they are 'norms' or rules, the following of which makes our epistemological language-games possible. For Coliva this is the sense in which we stand in a relation of objective certainty to these propositions. Again, the sort of nonsense that this anti-sceptical line of thinking attributes to the sceptic, Coliva explains, is a form of irrationality. It is irrational of the sceptic to call into question the propositions whose proper role is that of a rule or 'norm', the following of which is a condition on rational epistemic enquiry. The kind of certainty that this secures us in our relationship to the Humean sceptic's 'heavyweight assumptions' is enough, according to Coliva, to support our normal epistemic claims with respect to everyday empirical propositions.

Coliva spends much of her final chapter distinguishing her view of hinge propositions from the views offered in other readings of *On Certainty*. In particular, she is keen to distinguish her proposal from what she refers to as 'naturalist' and 'epistemic' interpretations of hinge propositions. The 'naturalist' interpretation says that our relationship to hinge propositions is never *propositional* in nature. Interpreters such as Daniel Moyal-Sharrock (e.g., 2004) and Avrum Stroll (e.g., 2005) claim that the sort of certainty we have with regard to hinge propositions is best described as 'something animal' (see OC, §\$358-9), where this is explicitly in contrast to any kind of propositional attitude. Coliva acknowledges that there is support for this reading in the text, but claims that once we get clear on Wittgenstein's views about the nature of propositions there is no need to take this view of hinge propositions (consider, for example, OC, §320). Coliva is sensitive to the tension already present in denying that hinge propositions, contrary to appearances, are empirical in nature, and so she is hesitant to go so far as to deny that they express anything propositional altogether.

Coliva also challenges interpretations of *On Certainty*—such as those offered by Wright and Williams—which contend that our certainty with respect to hinge propositions is not only

propositional but also epistemic in nature after all. Consider, for example, Coliva's critique of Wright. According to Wright, although we cannot properly claim that we *know* hinge propositions (in this context, think of hinge propositions as the 'heavyweight assumptions' that Coliva discusses with respect to the Humean sceptic), and although we have no evidence for thinking these propositions true, we are nonetheless *rationally entitled* to 'trust' them. Our hinge commitments thus enjoy a kind of warrant that is non-evidential in nature. This background of epistemically rational trust supports our knowledge of everyday empirical propositions.

Coliva contrasts such a view with her 'transcendental' point that hinge propositions "belong to the logic of our investigations not because they are somewhat specially—non-evidentially—warranted, but precisely because they are its unwarranted and unwarrantable conditions of possibility." (Coliva 2010, 107) In other words, Coliva insists that Wittgenstein's 'transcendental argument' against the Humean sceptic shows that our commitment to hinges is neither characterizable as rational nor irrational, since this commitment is a condition on the *possibility* of applying these notions in the first place.

Coliva also addresses further issues regarding whether Wittgenstein can be said to espouse a new form of foundationalism, and whether his views about hinge propositions have epistemological relativist ramifications. However, the primary significance of Coliva's interpretation of *On Certainty* lies in the particular stance she takes on the notion of a hinge proposition: namely an interesting middle ground between a variety of available options, one that characterizes our relationship to them as at once propositional and non-epistemic.

#### 2. ON REALISING THE GROUNDLESSNESS OF OUR BELIEVING

We think that Coliva is right to steer a course between what she calls the 'naturalist' and 'epistemic' readings of *On Certainty*. Indeed, one of the authors of this piece has independently argued for a similar proposal—*viz.*, an account of hinge propositions such that they are simultaneously unknowable and yet the possible subject of a propositional attitude.<sup>4</sup> Despite this broad agreement, however, there are some points on which there is divergence.

To begin with, there is Coliva's conception of radical scepticism. It is clear from how Coliva motivates her anti-scepticism that she conceives of radical scepticism in terms of there being an *adversary*, the radical sceptic, who is putting forward a particular proposal (e.g., that we don't know

anything; or at least, that we don't know very much at any rate). Call this the *adversary reading* of radical scepticism. Contrast this reading with a very different take on the problem, one which regards radical scepticism as a (putative) *paradox*, where this means that the problem emerges out of a deep tension within our own epistemological concepts. Call this the *paradox reading* of radical scepticism. What is key to the paradox reading is that there is no need to conceive of the sceptical problem in terms of an adversary at all, for insofar as there is any actual sceptic in play then this isn't someone motivating a sceptical conclusion, but rather merely someone making explicit this deep tension in our epistemological concepts.<sup>5</sup>

The paradox reading of radical scepticism is much to be preferred to the adversary reading. For one thing, since (arguably, anyway) there are no actual radical sceptics, to take the adversary reading is to do battle with ghosts. But, and more importantly, one of the drawbacks of the adversary reading is that it makes the problem of radical scepticism look far more tractable than it is. In charging the radical sceptic with putting forward an irrational and nonsensical doubt—as Coliva does—we forget that it was always part of the set-up of the sceptical paradox that the option of endorsing radical scepticism is unavailable. The challenge posed by the sceptical problem is to explain, given that this option is unavailable, what other 'intuitive' features of our epistemic practices we are willing to abandon in order to remove the contradiction that is in play.

Put another way, the task of the anti-sceptic *isn't* to show that endorsing radical scepticism is not a viable option (since we knew *that* already), but rather to demonstrate either (i) that what looks like a paradox is not really paradox at all (in the sense that what we thought were fundamental commitments which 'fell out' of our everyday epistemic concepts were in fact the product of faulty philosophical theory), or (ii) that there is an independent philosophical basis on which we can reasonably disregard some of our ordinary fundamental epistemological commitments. Call the former approach an *undercutting anti-sceptical strategy*; and call the latter approach an *overriding anti-sceptical strategy*.<sup>7</sup>

Clearly, an undercutting anti-sceptical strategy is to be preferred to an overriding anti-sceptical strategy. In the former, the philosophical obstacle that radical scepticism has put before us gets removed; whereas in the latter, we merely find a way of clearing it, though it remains. But sometimes with paradoxes the best we can hope for is an overriding strategy. As Stephen Schiffer (e.g., 1996) has memorably put it, perhaps some philosophical paradoxes are only susceptible to 'sad-face' rather than 'happy-face' solutions. Is radical scepticism a puzzle of this sort?

In focussing on the incoherence of radical sceptical doubt—i.e., the incoherence of someone actually advancing anti-sceptical doubt—Coliva in effect fails to properly engage with this issue. But we take it that with the problem so posed Coliva would regard her particular Wittgensteinian solution to the radical sceptical problem as an undercutting anti-sceptical strategy. That is, that the radical sceptical 'paradox' is not really a paradox at all since it trades on a conception of our epistemological concepts—one that allows for the kind of epistemic evaluation involved in expressions of Moorean certainty and sceptical doubt—which is simply incoherent. Assuming this is what she would say on this score, the question is: will it stick?

It is certainly true that Coliva's preferred Wittgensteinian anti-sceptical strategy—which as noted above, we are favourable towards—is not of an overriding sort (i.e., of a kind that you would find, for example, in certain epistemological proposals of a naturalistic/externalistic bent). But equally it's not clear either that this is straightforwardly an undercutting anti-sceptical strategy. For sure, it turns out that the folk on the street are quite right not to undertake the kind of fully general epistemological evaluation that Moore and the radical sceptic undertake. To that extent, there is no obstacle still in play for *their* knowledge. But what about the epistemologist who has undertaken this investigation and reached the same conclusion as Coliva? Can they return to a state of epistemic innocence in which they continue with their everyday epistemic evaluations as before?

On this score, we are doubtful. For while the essential locality of our practices of epistemic evaluation are ordinarily hidden (in the sense that, independently of an engagement with the radical sceptical problem, one would not be aware that they are *essentially* local), and while it is also true that on Coliva's preferred Wittgensteinian anti-sceptical strategy it is *necessarily* the case that all rational evaluation is essentially local, it is nonetheless still true that what we discover when we think our way through the sceptical problem is that there is a limitation on rational evaluation which we hitherto didn't realise existed. That is, while we are implicitly aware (prior to engaging with the radical sceptical problem) that our ordinary practices of epistemic evaluation are essentially local—in that the regress of giving reasons, and of presenting doubts, gives way fairly quickly—if called upon to wonder why this is so we would surely respond by saying that the limitations in play are *practical* rather than logical. From a non-philosophical perspective, what seems to limit our ordinary epistemic practices is not logic but rather merely the more mundane constraints of time, opportunity cost, ingenuity (or lack of it, anyway), and so on. The philosophical discovery that it is in the nature of rational evaluation that it cannot be fully general, and thus that it is in this sense inherently local,

is just that, a *discovery*. In particular, it is not—or, at least, not obviously anyway—a philosophical discovery that simply leaves things as they were.

The best way to think about what is going on here, we suggest, is that while we have an undercutting anti-sceptical strategy in play, it is even so a strategy which inevitably generates a kind of *meta*-scepticism, in that it leads to a philosophical discovery which, while falling short of radical scepticism, is nonetheless disquieting in just the direction that the radical sceptic was exploring. As Wittgenstein himself puts it at one point, "the difficulty is to realise the [*ultimate*] groundlessness of our believing." (OC, §166) To this extent, what Wittgenstein is offering us, even on Coliva's reading, is a kind of 'sceptical' response to the problem of radical scepticism.<sup>8</sup>

Elsewhere, one of the current authors has referred to this meta-sceptical problem as *epistemic angst* and, more recently, as *epistemic vertigo*. The latter is perhaps a more apt description of the phenomenon in play here. In conducting a philosophical inquiry into the nature of our epistemic commitments we effectively 'ascend' to an investigation which is unfettered by practical concerns, but what we discover as a result of this investigation, if Wittgenstein is right, is that our practices of epistemic evaluation are essentially local and thus that our believing is ultimately groundless. Even if in undertaking this inquiry we come to realise that the very idea of a fully general rational evaluation, whether positive or negative, is incoherent, it still remains that this inquiry leads to a recognition that our epistemic relationship to the world is not quite as we pre-theoretically conceived of it (which is, of course, not to say that our epistemic relationship to the world is not as we naïvely conceive of it, since the naïve don't have an articulated conception of this relationship at all). In epistemically ascending we thus both recognise an epistemic lack while also appreciating that there is no (first-order) philosophical basis for worrying about the 'lack' in question.

Hence the vertigo. Vertigo, after all, is a phobia, but one that has at its roots a rational basis, even though the fear itself is not rationally grounded and recognised as such. But still, just as someone atop a high tower can fully recognise that he is not in danger, and yet fear the height nonetheless, so someone who undertakes the kind of philosophical investigation that we are conceiving of can intellectually recognise that there is no actual epistemic danger (in the sense that the kind of improvement in their epistemic situation that was initially sought after is simply unavailable), while nonetheless feeling the epistemic vertigo. Prior to engaging with the radical sceptical paradox we implicitly took it as granted that there were ultimate grounds for our belief and that they were secure, but now that we have engaged with this problem we have to live with the recognition of the ultimate groundlessness of our believing.

If the foregoing is right, then even an undercutting response to the radical sceptical paradox of the kind that we are attributing to Coliva will not qualify as a completely 'happy-face' solution to this problem. For even once we jettison the theoretical assumptions which led to the paradox, the epistemic vertigo will remain. We contend that Coliva's Wittgensteinian response to the problem of radical scepticism would be strengthened both by conceiving of it along undercutting lines and by incorporating a recognition that epistemic vertigo as a response to even an undercutting antisceptical strategy is an integral part of the human epistemic condition.<sup>10</sup>

#### REFERENCES

- Cavell, S. (1979). *The Claim of Reason: Wittgenstein, Skepticism, Morality, and Tragedy*, Cambridge, MA: Harvard University Press.
- Coliva, A. (2010). Moore and Wittgenstein: Scepticism, Certainty and Common Sense, London: Palgrave Macmillan.
- Moore, G. E. (1925). 'A Defence of Common Sense', *Contemporary British Philosophy* (2nd series), (ed.) J. H. Muirhead, Allen and Unwin, London.
- —— (1939). 'Proof of an External World', Proceedings of the British Academy 25, 273-300.
- Moyal-Sharrock, D. (2004). Understanding Wittgenstein's On Certainty, London: Macmillan.
- Pritchard, D. H. (2005a). Epistemic Luck, Oxford: Oxford University Press.
- (2005b). 'Scepticism, Epistemic Luck and Epistemic Angst', Australasian Journal of Philosophy 83, 185-206.
- —— (2011a). 'Wittgenstein and the Groundlessness of Our Believing', *Synthese*, DOI: 10.1007/s11229-011-0057-8.
- —— (2011b). 'Wittgensteinian Quasi-Fideism', Oxford Studies in the Philosophy of Religion 4, 145-59.
- —— (2012). Epistemological Disjunctivism, Oxford: Oxford University Press.
- (Forthcoming). 'Entitlement and the Groundlessness of Our Believing', Contemporary Perspectives on Scepticism and Perceptual Justification, (eds.) D. Dodd & E. Zardini, Oxford: Oxford University Press.
- Ribeiro, B. (2002). 'Is Pyrrhonism Psychologically Possible?', Ancient Philosophy 22, 319-31.
- Schiffer, S. (1996). 'Contextualist Solutions to Scepticism', *Proceedings of the Aristotelian Society* (new series) 96, 317-33.
- Stroll, A. (2005). 'Why On Certainty Matters', Investigating On Certainty: Essays on Wittgenstein's Last Work, (eds.) D. Moyal-Sharrock & W. H. Brenner, 33-46, London: Palgrave Macmillan.
- Stroud, B. (1984). The Significance of Philosophical Scepticism, Oxford: Oxford University Press.
- Williams, M. (1991). Unnatural Doubts: Epistemological Realism and the Basis of Scepticism, Oxford: Blackwell.
- Wittgenstein, L. (1969). On Certainty [OC], (eds.) G. E. M. Anscombe & G. H. von Wright, (tr.) D. Paul & G. E. M. Anscombe, Oxford: Blackwell.
- Wright, C. J. G. (1991). 'Scepticism and Dreaming: Imploding the Demon', Mind 100, 87-116.
- (2004). 'Warrant for Nothing (and Foundations for Free)?', *Proceedings of the Aristotelian Society* (suppl. vol.), 78, 167-212.

#### NOTES

- <sup>1</sup> Published as Wittgenstein (1969).
- <sup>2</sup> See Moore (1925; 1939), respectively.
- <sup>3</sup> Here is a key passage:
  - "[...] the *questions* that we raise and our *doubts* depend upon the fact that some propositions are exempt from doubt, are as it were like hinges on which those turn.

That is to say, it belongs to the logic of our scientific investigations that certain things are *in deed* not doubted.

But it isn't that the situation is like this: We just can't investigate everything, and for that reason we are forced to rest content with assumption. If I want the door to turn, the hinges must stay put." (OC, §§341-3)

- <sup>4</sup> See especially Pritchard (2011*a*; 2011*b*; forthcoming).
- <sup>5</sup> See Stroud's (1984) towering work on philosophical scepticism for a penetrating account of the idea that radical scepticism presents us with a paradox. For further discussion of the idea that we should not conceive of the radical sceptic as an adversary, see Wright (1991).
- <sup>6</sup> Pyrrhonian scepticism was, of course, a 'lived' scepticism (indeed, insofar as it could be called a 'proposal', it was an ethical proposal). But this feature of the view is notoriously problematic. In a nutshell, the worry is that one can make sense of Pyrrhonian scepticism as a 'lived' proposal only insofar as we suppose that the doubt in play is mitigated, and certainly falling short of a widespread Cartesian doubt. For a helpful recent discussion of this point, see Ribeiro (2002).
- <sup>7</sup> For further discussion of this distinction, see Pritchard (2012, pt. 3).
- <sup>8</sup> As Cavell (1979) famously recognized—hence the quotation that heads this article. Interestingly, even Wright, who offers an 'epistemic' treatment of hinge propositions, regards his anti-sceptical proposal as a 'sceptical' solution to the problem. See Wright (2004, 206).
- <sup>9</sup> See, for example, Pritchard (2005a, ch. 9; 2005b; forthcoming).
- <sup>10</sup> Some of the ideas in this paper were explored in a talk (by DHP) to the Edinburgh Epistemology Research Group in 2012, and we are grateful to the audience on this occasion. We are also grateful to two anonymous referees from *Philosophia* for feedback on an earlier version of this paper. Special thanks to Annalisa Coliva.