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Iasi, str.T.Codrescu, nr.2, cod 700481
Tel/Fax: 004 0332 408922
Email: logosandepisteme@yahoo.com

www.logos-and-episteme.proiectsbc.ro

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RESEARCH ARTICLES

KNOWLEDGE AND THE IMPORTANCE OF BEING RIGHT

Davide FASSIO

ABSTRACT: Some philosophers have recently argued that whether a true belief amounts to knowledge in a specific circumstance depends on features of the subject's practical situation that are unrelated to the truth of the subject's belief, such as the costs for the subject of being wrong about whether the believed proposition is true. One of the best-known arguments used to support this view is that it best explains a number of paradigmatic cases, such as the well-known Bank Case, in which a difference in knowledge occurs in subjects differing exclusively with respect to their practical situation. I suggest an alternative explanation of such cases. My explanation has a disjunctive character: on the one hand, it accounts for cases in which the subject is aware of the costs of being wrong in a given situation in terms of the influence of psychological factors on her mechanisms of belief-formation and revision. On the other hand, it accounts for cases in which the subject is ignorant of the costs of being wrong in her situation by imposing a new condition on knowledge. This condition is that one knows that p only if one does not underestimate the importance of being right about whether p . I argue that my explanation has a number of advantages over other invariantist explanations: it accounts for all the relevant cases preserving the semantic significance of our ordinary intuitions, it is compatible with an intellectualist account of knowledge and it escapes several problems affecting competing views.

KEYWORDS: knowledge, Bank Cases, intellectualism

Introduction

Intellectualism is the view, traditionally endorsed by epistemologists, according to which what makes a true belief an instance of knowledge is exclusively a matter of truth-related factors, such as, for example, whether the evidence supporting one's belief is strong enough, or whether one's belief was formed in a reliable way.¹ Recently, some philosophers challenged this view arguing that whether a true belief amounts to knowledge in a specific circumstance partially depends on features of the subject's practical situation that are completely unrelated to the

¹ Jason Stanley, in *Knowledge and Practical Interests* (Oxford: Oxford University Press, 2005), defines intellectualism as the "thesis that knowledge does not depend upon practical facts" (6). The claim that knowledge is a matter of purely truth-related factors has been also called Purism by Jeremy Fantl and Matthew McGrath, *Knowledge in an Uncertain World* (Oxford: Oxford University Press, 2009). For a detailed discussion of intellectualism see also Stephen Grimm, "Intellectualism in Epistemology," *Mind* 120 (2011).

truth of the subject's belief, such as the costs for the subject of being wrong about whether the believed proposition is true. This view has been called *Subject-Sensitive Invariantism* (hereafter, *SSI* for short).²

One of the most important arguments in support of *SSI* is that this view best explains a number of paradigmatic cases. Such cases consist in a comparison of two situations in which subjects have the same position with respect to truth-related factors, but differ with respect to the importance of being right (or the costs of being wrong) about whether a believed proposition is true: the cases are conceived in such a way that much less is at stake in being right for the subject in the first situation than for the subject in the second situation. Assessors of the cases tend to ascribe knowledge only to the subject in the first situation. Let consider a specific example:³

LS Bank Case. Hannah has some evidence that her local bank will be open on Saturday, namely, she remembers that the bank was open when she deposited a

² *SSI* is a form of *invariantism*, insofar it holds that propositions expressed by knowledge-attributions don't vary from context to context (for example by varying the context of assertion of such attributions), and it is *subject-sensitive* because it holds that whether a subject knows something is sensitive to the practical situation of the subject. This view has been defended by, amongst others, John Hawthorne, *Knowledge and Lotteries* (Oxford: Oxford University Press, 2004) and Jason Stanley, *Knowledge and Practical Interests*. The view is also known as 'Sensitive Moderate Invariantism' (Hawthorne, *Knowledge and Lotteries*) and 'Interest Relative Invariantism' (Stanley, *Knowledge and Practical Interests*). In what follows I will refer primarily to the version of the view defended by Stanley, but what I will say will be also valid for the view of Hawthorne. Jeremy Fantl and Matthew McGrath ("Evidence, Pragmatics and Justification," *Philosophical Review* 111 (2002); *Knowledge in an Uncertain World*; and "Pragmatic Encroachment," in *Routledge Companion to Epistemology*, eds. Sven Bernecker and Duncan Pritchard (New York: Routledge, 2011)) defended a similar view that however differs on several important respects from those of Hawthorne and Stanley.

³ The *Bank Case* has been first suggested by Keith De Rose, in "Assertion, Knowledge and Context," *Philosophical Review* 111 (2002): 913. For similar cases see, for example, Stewart Cohen, "Contextualism, Skepticism, and the Structure of Reasons," *Philosophical Perspectives* 13 (1999) and Fantl and McGrath "Evidence, Pragmatics and Justification." Notice also that these cases are presented in different ways in the literature. In particular, sometimes the subject being evaluated uses the word 'know' and sometimes she does not. This is an important detail, for philosophers that originally suggested similar cases, such as DeRose and Cohen, interpreted them as arguments in support of epistemic contextualism, showing that the word 'know' is context-sensitive. In their perspective such cases had to show evaluator's intuitions about the truth-value of sentences that use epistemic predicates. Only recently such cases have been interpreted as supporting invariantist views about knowledge, such as *SSI*. In the context of these latter views what really matters is the evaluator's judgment of whether the subjects in the cases know or not. On this see also Grimm, "Intellectualism in Epistemology," 708.

cheque two Saturdays prior. However, whether or not the bank is open doesn't matter to Hannah. As a matter of fact, the bank will be open on Saturday. Asked whether she knows that the bank will be open, Hannah reports that she does know.

HS Bank Case. Hannah has some evidence that her local bank will be open on Saturday, namely, she remembers that the bank was open when she deposited a cheque two Saturdays prior. However, whether or not the bank is open matters a great deal to her. If the bank is closed she will not be able to deposit an important cheque. As a matter of fact, the bank will be open on Saturday. Asked whether she knows that the bank will be open, Hannah reports that she does not know and that it would be better for her to go in the bank and make sure that it will be open.

Under these circumstances, most of us would judge that Hannah is right in ascribing herself knowledge in *LS Bank Case* – her evidence seems good enough for her to know. Intuitively, Hannah is also right when she denies knowing in *HS Bank Case*. However, Hannah possesses the same evidence that the bank will be open on Saturday in the two cases. The only difference between the two cases seems to be that, while in *LS Bank Case* whether the bank is open is not very important for Hannah, in *HS Bank Case* whether the bank is open has very high practical consequences. This seems to show that variations in how important it is for Hannah to be right about whether the bank will be open on Saturday makes a difference to whether she knows that. In other words, in the exemplified cases factors related to the practical situation of the subject seem to determine whether or not the subject knows in each circumstance. According to *SSI*, this type of cases is best explained by denying intellectualism and assuming that whether one knows in a determinate circumstance partially depends on considerations about the practical situation of the subject. If a difference in one's practical interests or stakes can make a difference in one's knowledge, then our intuitions in cases like the Bank Case can be easily explained.⁴

To many, *SSI* is a too radical and counterintuitive departure from traditional epistemology. What strikes us as particularly implausible of this view is the denial of intellectualism. For this reason, some philosophers have suggested alternative explanations of these cases. In particular, some invariantists tried to explain the relevant intuitions in these cases by arguing that the contextual variation of knowledge in such cases is not due to pragmatic factors directly affecting

⁴ As Fantl and McGrath observe, the phenomenon just described is not specific of the exemplified cases in particular. "All we need is some case of knowledge without certainty, in which what is known is not irrelevant to the question of what to do" ("Pragmatic Encroachment," 564).

knowledge, but to the influence of psychological factors (such as fear and anxiety) caused by the subject's awareness of the importance of being right in a given situation, which bring about a revision of one's beliefs.⁵ This type of explanation has been credited to have several advantages over *SSI*, such as its matching ordinary intuitions about how our mechanisms of belief-formation and revision work in contexts such as those exemplified in the paradigmatic cases.

Against this type of explanation, *Subject Sensitive Invariantists* put forward new cases in which variations of practical conditions between the two situations do not affect the internal perspective of the subject, but still make a difference to whether the subject knows or not – the so called *Ignorant High Stakes* cases (hereafter, *IHS* cases).⁶ Such cases cannot be explained in terms of the influence of psychological factors on the subject's beliefs caused by the awareness of the stakes, for the subject in such cases is absolutely unaware of the importance of being right in her situation. These cases seem to suggest that factors outside an agent's purview affect whether or not an agent has knowledge. Unlike the appeal to psychological factors, *SSI* easily explains such cases.

In this article I argue for a new account of these cases – both traditional and *IHS* cases – that retains the advantages of the two explanations considered above

⁵ Similar explanations of the cases have been suggested by Kent Bach ("The Emperor's New 'Knows,'" in *Contextualism in Philosophy: On Epistemology, Language and Truth*, eds. Gerhard Preyer and Georg Peter (Oxford: Oxford University Press, 2005); "Applying Pragmatics to Epistemology," *Philosophical Issues* 18 (2008)) and Jennifer Nagel ("Knowledge Ascriptions and the Psychological Consequences of Changing Stakes," *Australasian Journal of Philosophy* 86 (2008); "Epistemic Anxiety and Adaptive Invariantism," *Philosophical Perspectives* 24 (2010)). There are also other solutions suggested by intellectualist invariantists. In particular, a number of philosophers questioned the reliability of the assessor's judgments about the cases. For different approaches along these lines see, for example, Timothy Williamson, "Contextualism, Subject-Sensitive Invariantism and Knowledge of Knowledge," *The Philosophical Quarterly* 55 (2005), Jonathan Schaffer "The Irrelevance of the Subject: Against Subject-Sensitive Invariantism," *Philosophical Studies* 127 (2006), Jessica Brown, "Knowledge and Practical Reason," *Philosophy Compass* 3 (2008), Jessica Brown, "Subject-Sensitive Invariantism and the Knowledge Norm for Practical Reasoning," *Nous* 42 (2008), and Jessica Brown, "Impurism, Practical Reasoning, and the Threshold Problem," *Nous* 48 (2012). Here I will not be concerned with this type of approach to the cases, assuming that the intuitive judgments about the cases reported above are fundamentally correct.

⁶ Stanley coined the term 'Ignorant High Stakes.' See Stanley, *Knowledge and Practical Interests*, 5 and ff. See also Chandra Sripada and Jason Stanley, "Empirical Tests of Interest-Relative Invariantism," *Episteme* 9 (2012). Some philosophers denied the intuitions behind these cases. Here, for the sake of argument, I will assume the validity of these intuitions. My aim here is not to dispute the validity of the intuitions given in support of *SSI*, but to show that an alternative intellectualist explanation settling these intuitions without explaining them away is possible.

(the psychological explanation and the one provided by *SSI*), and at the same time avoids several problems affecting them. My account retains part of the suggested psychological explanation of the cases, with its alleged advantages, but at the same time provides a separate explanation of IHS cases. Such an explanation accounts for cases in which the subject is ignorant of the importance of being right in her situation by adding a new intellectualist condition to other conditions traditionally ascribed to knowledge. This condition is, roughly, that *one knows that p only if one does not underestimate the importance of being right about whether p*. I will provide arguments in support of the truth of this condition, and will defend it against possible problems.

The plan of the article is as follows: in section 1, I discuss in more detail the psychological intellectualist explanation of the Bank Case introduced above, and I show some of its advantages over *SSI*. In section 2, I consider a modified Bank Case involving Ignorant High Stakes, and show that *SSI* can easily explain such type of case, while the suggested form of intellectualism cannot adequately account for it. In section 3, I introduce my explanation of the cases. In section 4, I argue that the suggested explanation has several advantages over other invariantist ones, and defend my proposal against possible objections. I summarize the results in a brief conclusion in section 5.⁷

1. An Intellectualist Explanation of the Bank Case: *CSM*

Some philosophers recently suggested alternative explanations of the Bank Case compatible with an intellectualist account of knowledge. According to a particular type of explanation, suggested by philosophers such as Kent Bach and Jennifer Nagel,⁸ in the exemplified situations the subject knows in *LS Bank* and does not know in *HS Bank*. However, the different epistemic status of the subject in the two situations is not due to the dependence of knowledge on pragmatic factors but to psychological reactions of the subject in response to the conscious consideration of the subject's stakes in her circumstance. Such reactions would affect the confidence of the subject in the relevant proposition; the diminished confidence

⁷ Let me add here an important remark on the scope of this article. My aim is to consider an alternative *invariantist* explanation of the considered cases. My explanation departs from other invariantist explanations, but maintains an invariantist perspective on knowledge. I will not compare here my explanation to other variantist explanations of the cases, such as contextualist and relativist ones. A comparative consideration of variantist explanations would have required too much space. I leave a discussion of the advantages of the suggested explanation on variantist approaches to future works.

⁸ Bach, "The Emperor's New 'Knows'" and "Applying Pragmatics to Epistemology;" Nagel, "Knowledge Ascriptions" and "Epistemic Anxiety."

would in turn lead to a withholding of the belief in the proposition, and thus to a lack of knowledge.⁹ Since this explanation moves the entire explanatory burden onto the presence or absence of belief in the given situations, it is plainly compatible with knowledge being a factor of true belief plus exclusively truth-related features such as the strength of evidence and the reliability of belief-forming processes.

Let's consider how a specific version of this explanation works in the Bank Case. In *HS Bank* it is very important for the subject to be right about whether the bank will be open on Saturday. The subject recognizes that much is at stake for her. She has a strong practical concern about being right in his circumstance. As a consequence, the subject is under psychological pressure; she fears being wrong and feels anxious. These psychological conditions produce a need for greater evidence in the subject, moving her to check and reconsider the evidential grounds and the presuppositions on which her belief is based. As a consequence of such reconsiderations, she withholds her outright belief, judging it to be based upon relatively inadequate evidence. Because knowledge requires (or at least implies) belief, the subject also loses knowledge.¹⁰ On the contrary, in *LS Bank Case* it is not particularly important for the subject to be right about what she believes. Given the relative importance of getting things right, the subject does not feel any anxiety pushing her to check the evidential grounds of her belief and reconsider uncertain presuppositions on which the belief is based. Consequently, she accepts as sufficient for believing the available evidence, keeps believing and knows.

Such a type of explanation – that, following Stanley,¹¹ I will call ‘*confidence-shaking maneuver (CSM)*’ – seems to provide an elegant and intuitive account of what is going on in the Bank case. The absence of knowledge in *HS Bank* case is explained by the subject's awareness of the high costs of being wrong.

⁹ For similar explanations see also Brian Weatherson, “Can We Do Without Pragmatic Encroachment?,” *Philosophical Perspectives* 19 (2005), Dorit Ganson, “Evidentialism and Pragmatic Constraints on Outright Belief,” *Philosophical Studies* 139 (2008) and Pascal Engel, “Pragmatic Encroachment and Epistemic Values,” in *Epistemic Value*, eds. Adrian Haddock, Alan Millar, and Duncan Pritchard (Oxford: Oxford University Press, 2009). Stanley (*Knowledge and Practical Interests*, 6) also credits John Kvanvig as having presented a similar suggestion on his blog *Certain Doubts*.

¹⁰ Notice that such explanation does not require a complete neutralisation of the credence in the given proposition. The mere decrease of confidence in the credence is sufficient for a suspension of the outright belief, and thus for a lack of knowledge in the situation. On that see for example Bach, “The Emperor's New ‘Knows,’” 26.

¹¹ Stanley, *Knowledge and Practical Interests*, 25.

That awareness undermines her confidence in her belief, challenging the presuppositions on which her evidence for that belief is grounded, defeating part of that evidence, and provoking the failure to know the relevant proposition.

CSM has several advantages over the explanation of the cases suggested by *SSI*. First, this explanation seems more intuitive than the one provided by *SSI*. An aspect of *SSI* that seems *prima facie* counterintuitive is that according to this view subjects could differ in their being in the position to know something regardless of any truth-conducive factor, just because of the different practical importance of getting things right in each circumstance.¹² *CSM* does not rely on any such assumption. It explains the cases by adducing the existence of psychological mechanisms that in situations in which a certain decision is practically relevant would activate specific emotive responses, such as pressure and anxiety, which in turn would affect the confidence in one's belief. Such an explanation does not require the assumption that knowledge (or any of its constituents) is partially a matter of factors that are not truth-conducive, and therefore it is compatible with an intellectualist account of knowledge. *CSM* also fits with ordinary intuitions of what's going on in such cases,¹³ and it has received independent confirmation from several studies in psychology supporting the existence of mechanisms of belief control and revision similar to those described above.¹⁴

A further advantage of *CSM* over *SSI* is that *CSM* has no problems explaining the dynamics of context shifts i.e. shifts from high-stakes to low-stakes contexts, and *vice versa*. It is relatively easy to lose knowledge when we pass from low-stakes to high-stakes contexts, but it is not equally easy to regain knowledge when we pass from high to low-stakes contexts. There is an asymmetry in changes in epistemic conditions between moving upwards from low to high-stakes contexts, and downwards from high to low-stakes contexts: once knowledge has

¹² For example, a subject S^+ might have more evidence than another subject S^- with respect to a given proposition p – be better informed, have done more checks and verifications, etc. – but because much more is at stake for S^+ than for S^- , S^+ can fail to know that p while S^- knows that p .

¹³ By experience, when I presented such type of cases to non-philosophers asking them what's going on in such cases, I always received an explanation similar to the one offered by *CSM*.

¹⁴ Nagel adduces a body of empirical work in psychology showing that epistemic anxiety is a natural aspect of the regulation of our thinking, “a factor that works to ensure that cognitive activity integrates with other types of activity in balancing expected costs and benefits” (“Epistemic Anxiety,” 408). See also “Epistemic Anxiety,” 408-413. The existence of dispositions to accept uncertain presuppositions in the background of one's beliefs has also a high adaptive utility for agents. Too much consideration of all the uncertain presuppositions we take in everyday life would require too much time and effort for what is at stake, given a weigh of costs and benefits. See, for example, Ross and Schroeder, “Belief, Credence, and Pragmatic Encroachment.”

been lost passing from a low- to a high-stakes context, it cannot be easily regained once one returns from a high- to a low-stakes context – at least until someone completely forgets the considerations that brought her from a low- to a high-stakes context.¹⁵ *CSM* easily accounts for such dynamics. When a subject loses knowledge in passing from a low-stakes to a high-stakes context, this happens because certain psychological mechanisms move her to reconsider the evidential grounds and the presuppositions on which her belief is based and to withhold her outright belief as a consequence of such reconsideration. In general, once one reconsiders the evidential grounds one had for some beliefs, one acquires more information about the relevant propositions: many uncertain presuppositions that one took for granted before, after one's reconsideration are grounded on new evidence and take the status of outright beliefs, while other presuppositions discovered to be evidentially ungrounded are definitively revised. These changes in the transition from a low-stakes to a high-stakes context affect one's overall epistemic status bringing to a relatively persistent revision or reconsideration of one's evidence for or against previously believed propositions. The new revised epistemic condition of the subject prevents her from recovering knowledge when stakes return to being low. On the contrary, *SSI* cannot easily account for these asymmetric dynamics of change in epistemic conditions. *SSI* predicts that a subject that lost knowledge passing from a low-stakes situation to one in which the stakes are higher, should regain knowledge when the stakes lower again.^{16,17}

¹⁵ An example: John is going to take a train directed to Venice where he must attend an important meeting. At the time of depart (t_0) he believes that the train will also stop in Verona. He remembers this from the train itinerary he read some days before. However, this information has no relevance for him at that time. Intuitively at t_0 John knows that his train will stop in Verona. However, after the departure, at time t_1 , John receives a phone call in which he is informed that the meeting has been moved from Venice to Verona. At that point he reconsiders the grounds on which he believes that the train will stop in Verona. He doesn't feel any more confident of his memory. He keeps telling himself "What if I were wrong? Maybe I have confused Verona with a similar name." At that point he suspends his belief, and hence he fails to know at t_1 . A few minutes later, at time t_2 , John is still wondering whether the train will really stop in Verona and intends to ask to someone, when he receives another phone call informing him that there has been an error in the former call and that the meeting will take place in Venice as planned. Intuitively, from time t_2 , even if there is nothing at stake for John in being wrong about whether the train will stop in Verona, John lacks the necessary confidence for believing and knowing that the train will stop there, even if his evidence is the same he had at time t_0 , before receiving the first call. So despite the lower stakes, John is unable to recover knowledge.

¹⁶ Notice that this problem also affects other explanations of such cases such as epistemic contextualism. As David Lewis puts the problem: "the boundary readily shifts outward if what is

Another advantage of *CSM* is that it avoids a number of counterintuitive consequences of *SSI*. For example, *SSI* predicts the acceptability of sentences like “I know that *p*, but if more were at stake I would not know it.”¹⁸ *CSM* avoids that sort of problems by excluding any direct role of stakes in determining whether a subject knows or not. Stakes would rather act only indirectly on the epistemic position of a subject, by eventually affecting the degree of confidence in a belief. The subject in low stakes, from her perspective, could consider the objective level of stakes irrelevant for one’s epistemic position, thus maintaining the unacceptability of such type of sentences. At the same time, a rise of the stakes would bring about a partial change in the subject’s perspective and, eventually, a modification of the degree of confidence in a belief and to the suspension of that belief.¹⁹

2. Ignorant High Stakes

Despite the advantages of *CSM* outlined in the previous section, there seems to be at least one reason for rejecting this strategy for explaining the relevant cases and endorsing the explanation provided by *SSI*. The type of cases considered above involve subjects who are aware of their practical interests in the given

said requires it, but does not so readily shifts inward if what is said requires that” (“Scorekeeping in a Language Game,” *Journal of Philosophical Logic* 8 (1979), 355). My aim in this article is to defend a new invariantist account of the cases and to contrast it with other invariantist explanations. For this reason here I will restrict my considerations to invariantist explanations of the cases.

¹⁷ Notice also that *SSI*, contrary to *CMS*, doesn’t even provide an explanation of the processual character of variations from low to high-stakes contexts, since *SSI* is a theory according to which such variations of knowledge do not depend on psychological processes but on objective features of the subject’s practical situation.

¹⁸ For a discussion of the problem see Michael Blome-Tillmann, “Contextualism, Subject-Sensitive Invariantism, and the Interaction of ‘Knowledge’-Ascriptions with Modal and Temporal Operators,” *Philosophy and Phenomenological Research* 79 (2009).

¹⁹ Another counterintuitive consequence of *SSI* that *CSM* avoids is the following: consider a case where a subject 1) has enough evidence for knowing that *p* only if stakes are low, 2) believes that stakes are high, but 3) actually stakes are low (we may call this case *Ignorant Low Stakes*). Intuitively, we would not be disposed to attribute knowledge to the subject in this scenario (as in IHS Bank case, the subject herself would not be disposed to self-ascribe knowledge). Nevertheless, according to *SSI*, the subject possesses enough evidence for knowing in her situation, and thus should know. On the contrary, *CSM* provides an explanation in conformity with the intuition that the subject does not know in this scenario: since she believes that stakes are high, her psychological conditions inhibit the formation of a belief about the matter. As a consequence, the subject does not know.

circumstance. These subjects possess the same degree of evidence supporting their belief through the different contexts, but they have a pressing practical concern in high-stakes contexts and no corresponding concern in the low-stakes contexts. However there are cases in which a subject has enough evidence to support a low-stakes judgment but not a high-stakes one, she believes that she is in a low-stakes context and is therefore free from practical concerns, but she is in fact in a high-stakes context without knowing that she is. In such cases our intuition is that the subject does not know. These cases – that philosophers call *Ignorant High Stakes cases*²⁰ (hereafter *IHS cases*) – seem to show that factors beyond what the subject recognizes about her situation affect whether or not she has knowledge. *CSM* has no easy explanations of such cases. On the contrary, *SSI* easily explains them.

Consider a specific example of this type of cases:²¹

IHS Bank Case. Hannah has some evidence that her local bank will be open on Saturday, namely, she remembers that the bank was open when she deposited a cheque two Saturdays prior. Whether the bank is open matters a great deal to her. If the bank is closed she will not be able to deposit an important cheque. However, Hannah does not know this. She thinks that there are no urgent practical reasons for her to deposit the cheque on Saturday. As a matter of fact, the bank will be open on Saturday. Asked whether she knows that the bank will be open, Hannah reports that she does know.

In *IHS Bank Case*, Hannah is in a high-stakes situation; it is very important for her to deposit the cheque by Saturday. However, she does not know that depositing the cheque is so important (she even doesn't believe that). She has no special reason to think that she is in a High Stakes situation.²² Hanna attributes herself knowledge that the bank will be open on Saturday, as does the subject in *LS Bank Case*. However, intuitively, it seems that Hannah does not know that the bank will be open; her actual evidence seems not to be sufficient for knowing given what there is at stake for her in the situation.

Since the subject in *IHS cases* is not aware of the high stakes in her practical situation, it cannot be that the agent's recognition and awareness of these stakes leads to a diminished level of confidence and a withholding of belief in the relevant proposition. The only factor that seems to make a difference between *LS*

²⁰ For a discussion of such cases see Stanley, *Knowledge and Practical Interests*, and Sripada and Stanley, "Empirical Tests of Interest-Relative Invariantism."

²¹ For a similar case see Stanley, *Knowledge and Practical Interests*, 5.

²² It is important here to stress that in *Ignorant High Stakes* the relevant agent is not only unaware of the stakes, but is not accountable as responsible for not knowing the stakes. In fact in such cases the subject has absolutely no idea that she is in a high stakes situation.

and *IHS Bank* cases is the difference in the stakes compared to the subject's amount of evidence. *SSI* easily explains the intuition in *IHS Bank*. According to *SSI*, knowledge is partially a factor of the subject's objective stakes in a given circumstance. Whether a subject knows or not depends on features of the subject's practical situation, such as the objective costs for the subject of being wrong about what she believes in a given circumstance. Given the evidence available in the bank cases, the subject is in the position to know in cases in which being right about whether the bank will be open is not very important, as in *LS Bank Case*; but she is not in the position to know when the importance of getting things right is relevantly high, as in *HS* and *IHS Bank* cases.

On the contrary, *CSM* finds it harder to account for the *IHS Bank Case*. *CSM* explains the difference in knowledge between low- and high-stakes cases in terms of the influence of subjective psychological factors. In non-ignorant *HS* cases, where a subject recognizes that the costs of being wrong are particularly high, the subject's perceived practical relevance of the situation determines psychological conditions that eventually undermine the available evidence judged inadequate and bring to a withholding of her belief. The absence of belief is supposed to explain why in the given circumstance the subject does not know. Therefore, *CSM* does not take a subject's actual stakes to be a factor in whether she has knowledge; stakes have only an indirect impact, mediated by their influence on belief. However, in *IHS* cases the subject ignores the potential costs of being wrong in that particular situation; she does not recognize the objective practical relevance of the situation. Consequently, the psychological conditions necessary for undermining the available evidence and bringing to a withholding of belief do not obtain and the subject continues to believe with the same degree of confidence.

Importantly, from the point of view of *CSM*, *IHS* cases do not differ in any epistemologically relevant respect from low-stakes cases. So the defender of *CSM* is forced to accept that, contrary to the ordinary intuition, in the *IHS Bank case* the subject does know that the bank will be open, as in *LS Bank case*. This sounds odd, not only because it contrasts with the common intuition about *IHS* cases, but also because, as Stanley observes, it seems that the subject is more knowledgeable about her situation in *HS Bank* than she is in *IHS Bank*. It does not seem correct that adding a little ignorance increases knowledge.²³ Furthermore, it seems that if the subject does not know in normal high-stakes cases, she also does not know in *IHS* cases.

²³ Stanley, *Knowledge and Practical Interests*, 6-7.

3. A New Intellectualist Explanation of the Cases

In section 2 we considered *CSM*'s difficulties in explaining IHS cases. In general, advocates of *CSM* answer this challenge by accepting that we have the intuition according to which in IHS cases the subject does not know, but they argue that such an intuition is in error, and that the subject in such cases knows. They explain away the (in their view) wrong intuition about the subject's epistemic status in IHS cases with an error theory: in judging such cases from a third-person perspective the assessor of the cases supplies a distorted assessment of the epistemic situation of the subject, projecting on her the concerns that she would have if were aware of her practical situation. The knowledge-ascriber misrepresents the actual epistemic condition of the subject, and that obstructs her from appreciating such a condition as sufficiently reasonable for knowing. Intuitions that IHS subjects lack knowledge are thus to be dismissed as wrong by upholders of this view.²⁴

Against this reply, it has been remarked that explaining away the IHS cases with an error theory has the drawback of providing an excessively asymmetric account of the relevant cases. The explanation provides an account respecting the validity of our intuitions for non-ignorant High Stakes cases and an entirely different error-theoretic account for ignorant High Stakes cases.²⁵ Anyway, also assuming the overall plausibility and coherence of the error theory adduced by advocates of *CSM*, it seems that if an explanation of IHS cases preserving the semantic significance of ordinary intuitions and avoiding an error theory is available, this should be preferred.²⁶

I don't take the above considerations to be definitive reasons to reject *CSM*, but I take them to provide motivation for canvassing alternative explanations of the relevant facts. In what follows, I offer an account of all the exemplified cases that fares better than *CSM* with respect to these criteria. This account explains all the cases without appealing to an error theory, and is compatible with an intellectualist conception of knowledge – though partially divergent from traditional ones. It provides an explanation of non-ignorant cases along the lines

²⁴ See, for example, Nagel, "Epistemic Anxiety," 426-427. According to Nagel, the knowledge-ascribers in such situations are victims of certain psychological bias: it is psychologically very difficult for the ascriber to suppress the information about the subject's stakes in evaluating her reasoning. A similar explanation has been suggested by Bach, "Applying Pragmatics to Epistemology," 83.

²⁵ Sripada and Stanley, "Empirical Tests of Interest-Relative Invariantism," fn. 7.

²⁶ In general, philosophers agree that one must adopt explanations that confirm our ordinary intuitions as much as possible. See, for example, Stanley, *Knowledge and Practical Interests*, 33.

suggested by *CSM*, retaining the many advantages of such an explanation, such as its intuitivity and the ability to explain the dynamics of change of epistemic conditions in variations from low- to high- and from high- to low-stakes contexts. At the same time, this explanation preserves the validity of the ordinary intuition that subjects in IHS cases do not know.

Let assume that our intuitions in all the considered cases are correct, i.e., that in all such cases the subject knows in low-stakes cases and does not know in high-stakes cases (both ignorant and not). If so, then apparently the only available explanation of these cases seems to be one according to which pragmatic factors determine whether a subject knows or not, such as *SSI*. In fact, if we compare *IHS Bank Case* to *Low Bank Case* both descriptive and normative truth-relevant factors seem to be exactly the same for the subject in the two cases: in both cases the subject holds a true justified belief based on the same piece of evidence. It seems that the only difference between these two cases lies at the level of the practical situation of the subject: in *IHS Bank* the subject is in a high-stakes situation (even if he does not know this), while in *Low Bank* the subject is in a low-stakes situation.

However, at a closer look, the practical situation of the subject is not the only feature that varies in the two cases. There is another variable factor that concerns the epistemic position of the subject. The subjects in *IHS Bank* and *Low Bank* share the same internal mental attitudes; they both believe that the bank will be open on Saturday and with the same degree of evidence. They also both believe that they are in a low-stakes situation. But they differ in the fact that while the subject in *Low Bank Case* is *right* about his own practical situation, the subject in *IHS Bank Case* is *wrong* about it. In other words, the two subjects do not differ only with respect to the importance of being right in their respective circumstances, but also with respect to the epistemic appropriateness of the assessment of their own practical situation: both judge to be in a low-stakes situation, but one is right in that judgment, while the other is wrong. The subject's assessment of her practical situation in the IHS case is epistemically inappropriate, for she ignores the importance of being right given what there is at stake.²⁷

²⁷ This point has been noted also by Stanley, *Knowledge and Practical Interests*, 7. Stanley recognizes the difference in the epistemic condition between subjects in Ignorant High Stakes and Low Stakes cases observing that a subject in Low stakes cases is more acknowledgeable than one in IHS cases, and that the latter has more ignorance than the former. Such ignorance is in the assessment of one's cognitive stand with respect to one's own practical situation. However Stanley does not consider the possible consequences of such considerations.

Such a difference leaves open the space for an alternative intellectualist explanation of the lack of knowledge in IHS cases. Consider the following necessary condition on knowledge:

(C) S knows that *p* only if S does not underestimate the level of importance of being right about whether *p* in S's actual circumstance

According to (C), for knowing a certain proposition it is necessary, amongst other things, not to underestimate one's practical situation. (C) easily explains why in an IHS case the subject does not know, while in a Low-Stakes case she knows. The reason is that in a low-stakes case the subject doesn't underestimate the relevance of being right about whether it is true that *p*. This, according to (C), is compatible with knowing *p*. On the contrary, in an IHS case the subject underestimates such relevance, and thus violates the constraint that (C) puts on knowledge. In IHS cases, even if the subject's confidence in her belief were not shaken, she would still lack knowledge because of her improper evaluation of the relevance of being right about whether the believed proposition is true.^{28, 29}

(C) explains the lack of knowledge of a given proposition in IHS cases by reference to another lack of knowledge, that of features of the subject's practical

²⁸ Why does (C) claim that in order to know a proposition one *must not underestimate* the importance of being right about the given proposition, and not simply that one *must judge correctly* such importance? The reason is that there are possible counterexamples to a similar condition requiring the mere correct judgment of such relevance. Consider for example the case of a subject that believes that she is in a high-stakes context, has evidence sufficient for retaining her belief in such a context, but nevertheless, unbeknownst to her, she is in a low-stakes context. In this case the subject does not correctly evaluate her practical situation, she overestimates the importance of being right about whether the believed proposition is true, but nevertheless intuitively she possesses knowledge. (C) allows that the subject in this situation knows even if she incorrectly evaluates her position. In fact, despite her assessment of the situation is incorrect, she is not underestimating the importance of her practical situation. I am confident that further possible counterexamples to (C) can be easily accommodated by similar refinements of (C).

²⁹ With *assessment*, *evaluation* and *judgment* I don't refer here to the actions of consciously deliberating about the importance of the situation after a ponderate and attentive consideration of it. Rather I have in mind some epistemic attitude such as a dispositional state of belief, esteem or recognition of the importance of the situation, that may eventually be present at a subintentional level, not immediately considered in one's thoughts, but still conscious. When a participant to a quiz is faced with a question where correctly answering means winning \$ 100000, she doesn't really focus on the importance of being right in her answer. Rather, she directly focuses on what the possible answer to the question is, even if she is perfectly conscious of what it is at stake in her situation. She assesses her situation as very important even without explicitly affirming with an action of deliberation that it is.

situation. Here it is important to remark how the condition on knowledge stated by (C) involves exclusively truth-conducive factors, bearing on the correctness of one's judgment of a certain state of affairs. Being correct about one's judgment or evaluation is not a pragmatic matter – it does not directly concern any practical factor. It rather concerns the epistemic appropriateness of one's mental state. As many philosophers remarked, the rightness or wrongness (correctness or incorrectness) of one's belief or judgment is a genuinely epistemic matter.³⁰ Therefore (C) states a condition fully compatible with an intellectualist account of knowledge, even if this account will relevantly differ from other traditional accounts.³¹

(C) provides an intellectualist explanation of why in an IHS case the subject does not know, while in a Low-Stakes case she knows. In section 2 we saw that *CSM* faces difficulties in explaining IHS cases even though it provides a plausible explanation of other cases in which the subject appropriately perceives the importance of being right in her practical situation. I suggest a disjunctive explanation of the cases: on the one hand, non-ignorant cases, in which the subject is aware of the costs of being wrong in her circumstance, can be accounted for by an explanation along the lines of *CSM*, in terms of the influence of psychological factors on mechanisms of belief-formation and revision. On the other hand, (C) can account for IHS cases, in which the subject is ignorant of the costs of being wrong in her situation. As said above, neither condition (C) nor *CSM* require the assumption that knowledge is partially a matter of non-truth-conducive factors. Thus the suggested disjunctivist explanation is compatible with an intellectualist account of knowledge.

³⁰ Many philosophers recently argued that standards of correctness are constitutive of certain epistemic states and actions such as those of believing and judging. According to this view, one does not believe if she does not hold a mental state which is correct or incorrect depending on whether what she believes is true or false (see, for example, Ralph Wedgwood "The Aim of Belief," *Philosophical Perspectives* 16 (2002), Paul Boghossian, "The Normativity of Content," *Philosophical Issues* 13 (2003), Nishi Shah, "How Truth Governs Belief," *Philosophical Review* 112 (2003), and Nishi Shah and David Velleman, "Doxastic Deliberation," *Philosophical Review* 114 (2005). Similar considerations are valid also for the notion of evaluation that I introduced in (C), that I characterized as an attitude that may be included in the family of doxastic states. According to such a view not only getting things correctly or incorrectly is a genuinely epistemic matter, but the appropriateness or inappropriateness of such attitudes would be also an essential epistemic feature of the attitude.

³¹ I will be back to the specific intellectualism involved in my account and the differences with respect to traditional intellectualist accounts when I will consider specific objections. See in particular objections 2 and 3 and replies below.

4. Assessing the New Explanation of the Cases

In the former section I offered a disjunctive explanation that covers all cases. This explanation accounts for non-ignorant cases using the explanation offered by *CSM*, and accounts for ignorant high-stakes cases by means of the (C) constraint. In this section I will discuss a series of advantages that this explanation has over other explanations of the same cases, and in particular over *SSI*. I will also address some possible objections to this explanation.

Advantage 1. The suggested intellectualist explanation has at least the same explanatory power as other non-intellectualist explanations such as the one provided by *SSI*, since it delivers equivalent predictions.³² However, since intellectualism is deeply entrenched in our ways of thinking about knowledge, if two explanations can be offered predicting the same results, one requiring a non-intellectualist account of knowledge, while the other preserving an intellectualist account of this notion, the latter should be preferred.

Advantage 2. The suggested explanation is capable of retaining the advantages of a psychological explanation of the relevant cases (such as *CSM*), while at the same time escaping its problems. As shown in Section 2, *CSM* has a number of advantages over the explanation of the cases provided by *SSI*: it has a higher degree of intuitivity and it easily accounts for certain dynamics of change of epistemic conditions in variations from high-stakes to low-stakes contexts. At the same time, my explanation solves the problems that Ignorant High Stakes cases pose to *CSM*.

Advantage 3. My explanation preserves the intuition that the failure of knowledge in ignorant and non-ignorant High Stakes cases is due to different

³² Notice also that several arguments advanced in support of *SSI* can be easily adapted as arguments in support of the suggested explanation. An argument commonly adduced in support of *SSI* is that such an account provides a plausible explanation of how knowledge relates to rational action. According to John Hawthorne and Jason Stanley, "Knowledge and Action," *Journal of Philosophy* 105 (2008), that knowledge is sensitive to practical stakes explains why it is appropriate to treat a proposition as a reason for action if and only if this proposition is known. The suggested account of the various cases predicts knowledge in precisely the same circumstances than *SSI*, and is therefore compatible with a similar explanation of the relation between knowledge and practical reasoning. Similar considerations are valid for other arguments given in support of *SSI*, such as the ability to provide an adequate response to the problem posed by skeptical arguments formulated with lottery propositions scenarios (Hawthorne, *Knowledge and Lotteries*).

factors. Intuitively, the subject in *HS Bank* case does not know because the perceived importance of the situation in the given circumstance makes her to feel unsure, thereby modifying her degree of confidence in her beliefs and defeating her knowledge. On the contrary, it seems that in IHS cases the ignorance is due to some impropriety of the subject not reducible to a mere descriptive psychological factor. The subject in such cases does not know because there is some inappropriateness in her epistemic condition, an inappropriateness of which she is not aware. According to *SSI*, however, the explanation of the lack of knowledge in both cases is due to an objective practical factor, namely, that the stakes of the subject in the given situation are too high if compared to her available evidence.³³ On the contrary, the disjunctive explanation offered here allows us to account for the different intuitions in the two types of cases: in non-ignorant High Stakes cases the subject does not know because of psychological factors, while in IHS cases she does not know because of a normative epistemic factor – namely, because the subject’s representation of her practical situation is incorrect.

Advantage 4. The endorsement of (C) instead of some pragmatic condition on knowledge such as those suggested by advocates of *SSI* provides also a partial solution to several problems affecting *SSI*. For example, it has been remarked that *SSI* predicts the truth of certain unintuitive past- and future-tense knowledge-ascriptions. Here a case from Stanley:

[S]uppose that on Thursday, Hannah had a bill coming due over the weekend. So, on Thursday, she did not know that the bank would be open on Saturday. But suppose that, on Friday, the company to whom the bill was owed decided to alleviate the debt of all of its customers. So, on Thursday, Hannah was in a High Stakes situation, whereas, on Friday, she was not. Then it would seem that [*SSI*] entails the truth of the following:

(2) Hannah didn't know on Thursday that the bank would be open on Saturday, but she did know on Friday.

³³ It is not clear whether the practical factor on knowledge adduced by *SSI* in order to explain the cases is a normative or a descriptive factor. Fantl and McGrath (“Evidence, Pragmatics and Justification,” *Knowledge in an Uncertain World*; and “Pragmatic Encroachment”) describe this factor in normative terms, as a condition linking knowledge to the warrant, rationality or justification of acting on what it is known. Hawthorne and Stanley (“Knowledge and Action,” 576) accept that there is a similar normative connection between knowledge and rational action, but consider such a connection a consequence of the relation between the epistemic position of a subject and features of her practical environment, such as the stakes of the subject in a given circumstance. Whether the latter factor can be conceived in purely descriptive terms is an unclear matter.

That is, [*SSI*] seems to predict that (2) is true, even though Hannah had the same evidence on Friday as she did on Thursday, and nothing changed about the bank's opening hours. This is quite unintuitive.³⁴

Such a case seems particularly problematic because apparently it shows that knowledge can come and go regardless of any change in the cognitive position of the subject (her available evidence, her confidence in her belief, and so on), exclusively because of changes in the practical environment of the subject which modify the relevance for her to be right about whether a given believed proposition is true. Also (C) predicts the truth of such type of claims. However, such claims appear less counterintuitive if one accepts (C) instead of a pragmatic condition on knowledge. Though Hannah had the same evidence that the bank was open on Friday as she did on Thursday, she didn't have an equally good epistemic position with respect to the importance for her that the bank was open in the two days. With respect to this feature, her epistemic position was appropriate on Thursday, but not on Friday. In this way (C) explains the change in Hannah's knowledge in terms of a change in her overall epistemic condition. Changes in the practical environment of Hannah will not affect her epistemic status in a direct way, but only indirectly, insofar such changes will modify the epistemic appropriateness of her judgment of the importance of the situation. Consequently, whether Hannah knows or not in the circumstance will be exclusively a matter of her epistemic position at that time – where such a position also includes her appropriate assessment of her practical situation.

Objection 1. An objection that could be addressed to the suggested explanation of the considered cases is that it seems that the only reason for accepting (C) is that it escapes the problems of *CSM*, retaining its advantages. There does not seem to be independent reasons for endorsing the condition. In this respect, (C) seems to lack independent motivation, and thus the full explanation appears to be *ad hoc*.

Answer. This objection could be simply rebutted by noting that one of the main reasons (if not the main reason) for endorsing *SSI* is that it explains the considered cases. Such consideration could be *ipso facto* applied in defence of the non-*ad hoc*ness of my account.³⁵ However, I think that there are independent

³⁴ Stanley, *Knowledge and Practical Interests*, 106-107.

³⁵ Of course, this is not the only reason adduced in support of *SSI*. However, the other arguments in support of this view are all arguments to the best explanation of certain features, such as the relation between knowledge and rational action, that as I argued in footnote 32 may be equally well accounted for by my view.

reasons for accepting (C) as a plausible condition on knowledge, independently of its explanatory relevance for the various cases. Knowledge of a proposition presupposes the possession of a broad set of information about the epistemic environment in which a proposition is known: a precondition for knowing that I have hands is that I possess knowledge that there is an external world, that I am not dreaming now, and so on. These pieces of information about the epistemic environment in which a proposition is known do not directly support the truth of that proposition and may sometimes pass unnoticed, but they are necessary for knowing. Similarly, it could be argued that another type of information constituting a precondition for the knowledge that p is constituted by correct assessments about the practical situation in which p is believed – more precisely, about the importance of being right about whether the believed proposition is true. These appropriate assessments of one’s practical situation would constitute another piece of information about the epistemic environment in which a proposition is known, necessary, with many other pieces of information, for the possession of that knowledge.³⁶

³⁶ According to the picture outlined in this paragraph, it follows that background information about the epistemic environment in which a subject believes a given proposition are necessary for knowledge. Such information can eventually constitute evidence even though they do not directly raise the probability of the truth of the believed proposition. Part of the information constituting evidence for p would be information about the overall situation in which the agent believes that p . In this respect, a significant part of the information contributing to the knowledge of p would not be related to p in a way that rises or diminishes the probability of p , but would concern the background in which p is involved and the environmental situation in which the subject grasps p . I am open here to accept a stricter notion of evidence according to which evidence is support of the mere probability of some truth. However, I endorse the view that part of what makes belief knowledge is determined by certain factors, in addition to true belief, which are not straightforwardly related to the truth or probability of the believed proposition, such as some information about the broad situation in which the subject believes the known proposition. Notice that this point is not an original feature of my account. Also according to traditional accounts of knowledge, truth-related factors are not only factors merely raising the probability of p , concerning a broader background of propositions related to p in an indirect way. For example, several internalist accounts of knowledge accept certain higher-order conditions on knowledge – such as that one have reflective awareness of the reliability of one’s belief-forming mechanisms, or that one is in a position to know that one knows. Similarly, according to views defended by Ludwig Wittgenstein *On Certainty* (Oxford: Basil Blackwell, 1969) and Crispin Wright, “Warrant for Nothing (and Foundations for Free)?” *Proceedings of the Aristotelian Society* 78 (2004), some beliefs would work as presuppositions grounding big part of our knowledge. Doubting of such presuppositions would rationally commit one to doubting the significance or competence of the full cognitive project in which the subject is engaged (Wright, “Warrant for Nothing,” 188-197). Knowledge would depend partially on such

Objection 2. Someone may argue that the suggested account is not an alternative to SSI, but rather a species of it. In fact (C) requires that one has a correct assessment of what the stakes are. However, whether your assessment of what the stakes are is correct or incorrect depends on features of one's practical situation.

Answer. According to SSI whether a true belief amounts to knowledge in a specific circumstance partially depends on features of the subject's practical situation that are completely unrelated to the truth of the subject's belief. Though I agree that the correctness or incorrectness of the epistemic assessment about the subject's practical situation depends on features of the situation, this dependence is far from being unrelated to the truth of the subject's beliefs. On the contrary, (C) bears on the subject's beliefs and epistemic assessments. Therefore, by definition, the account is not a species of SSI. Here it is also important to stress that epistemic assessments about the subject's practical situation depend on features of the situation in a way fully compatible with intellectualism. This dependence has close similarities with that between knowledge of practical facts and these very facts. Whether I know that it's important for me not to be wrong about the truth-value of p obviously depends on whether it's important for me not to be wrong about that. Since knowledge is factive, it depends on practical conditions in this trivial sense. However, this type of dependence, far from being problematic for intellectualism, is plainly compatible and obviously admitted by any traditional intellectualist account of knowledge. A similar consideration obtains for correct belief that, as knowledge, is factive.

Objection 3. Someone could object that, even if apparently the provided explanation seems to involve exclusively truth-related non-pragmatic factors bearing on the epistemic appropriateness of one's beliefs and judgments, an intellectualist account of knowledge resulting from such an explanation would significantly differ from other traditional accounts. It could be argued that such an

presuppositions (such as that there is an external world), even if these presuppositions would not directly contribute to knowledge as evidence (in its stricter sense) of the truth of the known propositions, but as background information constituting a precondition for knowledge. The view I considered here has also some similarities with a view recently defended by Richard Foley, *When is True Belief Knowledge?* (Princeton and Oxford: Princeton University Press, 2012), according to which information about the broad situation in which the subject knows a proposition, also only indirectly related to the truth of that proposition, can matter for knowing. See also Hawthorne and Stanley, "Knowledge and Action," fn. 6.

account would pose as much of a threat to traditional views as pragmatic views. This would undermine some of the appeal of my explanation.

Answer. I agree that an account of knowledge compatible with condition (C) would be unorthodox. What is not conventional with this account is that, while whether or not a subject correctly judges the importance of being right about p is an epistemic matter, such a matter is ‘non-evidential’ with respect to p , in the sense that the acknowledgment of the importance of being right about whether p does not directly raise or lower the epistemic likelihood of p itself, and therefore is not straightforwardly related to the truth of that proposition. However, (C) still preserves the intuition that knowledge is fully a matter of the overall appropriate information possessed by the subject. According to this account, whether a subject knows is fully a factor of the truth-conducivity of a subset of one’s overall beliefs (including beliefs about the importance of being right about p). An account of knowledge along these lines would therefore be plainly intellectualist, even if of an unconventional sort.³⁷ This would make such an account more plausible than one making knowledge immediately sensitive to pragmatic conditions (as argued in *advantage I*). Still, the fact would remain that such an account poses a threat to traditional views. On this I agree with the objector, noting that it was not my intention here to provide a defence of an account of knowledge compatible with orthodoxy in epistemology. My aim here is rather to show that an explanation of the relevant cases can be achieved, maintaining that knowledge is a matter of true beliefs and other truth-related factors and without appealing to an error-theory.

Objection 4. Another possible objection to my explanation is that it does not avoid a further problem for *CSM*. According to *CSM*, a subject in a non-ignorant

³⁷ To the extent that one conceives truth-related factors as factors related exclusively to the truth of the known proposition, and defines intellectualism in terms of these factors, one may even deny that my view is intellectualist. I think that the issue here is terminological. If intellectualism is defined as sensitivity to factors that are directly related to the support of the truth of the known proposition, then I agree that my view is not intellectualist. On the contrary, if intellectualism is defined as the thesis that the subject’s practical situation is not directly relevant for determining knowledge (as Stanley defines it, “the thesis that knowledge does not depend upon practical facts” (*Knowledge and Practical Interests*, 6)), or as the view that knowledge depends only on factors related to the truth/epistemic correctness of one’s overall beliefs, then my view is plain intellectualist. Here it is important to notice that if intellectualism is conceived in the former sense, then many traditional accounts of knowledge commonly considered intellectualist are not such. By way of example, see the views mentioned in footnote 36. My account is at least as intellectualist as these other traditional views in the literature.

High Stakes situation revises her belief as a consequence of a lack of confidence caused by psychological factors, such as the anxiety of being wrong stemming from considerations of the practical situation. However, this is not sufficient for granting that the subject in high stakes who is aware of her practical situation will react by feeling anxious and consequently modifying her degree of confidence in the believed proposition. The subject may realize that it is very important for her to be right, but irrationally fail to react in the appropriate way to such a judgment (i.e., feeling pressure and anxiety), continuing to believe and willing to act on that belief. Nevertheless, according to some philosophers, in such cases we are still inclined to deny knowledge to the subject. If their judgment is correct, the lack of knowledge in such cases can be explained by *SSI* but not by *CSM* and by my account.³⁸

Answer. Personally, I don't find this objection to *CSM* very compelling. I do not have clear intuitions about possible cases in which a subject is so irrational as to recognize the high importance of being right about *p* and yet hold a belief that *p* on scant evidence. However, even admitting that this objection has some force against *CSM* and my disjunctive explanation, it can be addressed by amending (C) appropriately. For example, (C) can be implemented with a further condition: for knowing it is not only necessary that the subject's assessment of her practical situation is correct, but also that there is a rational response to such an assessment generating the amount of anxiety appropriate in the situation. Another possible strategy for dealing with this objection is to include the appropriate assessment of the subject's stakes as part of the reliability conditions of a belief. The idea is that a belief is reliably formed or retained only if the subject takes in consideration the available information about her practical situation in the appropriate way, reacting with an appropriate psychological response – that means that if stakes are sufficiently high she must react with anxiety, and such anxiety must properly interact with her degree of confidence in the belief. In short, the idea is that if the processes 1) from the appropriate assessment of one's practical situation to the adequate psychological and emotional reactions, and 2) from these reactions to an eventual commensurate change of confidence do not obtain, then the belief is not reliably formed (or retained).³⁹

³⁸ A similar point has been put forward by Hawthorne *Knowledge and Lotteries*, 173-174, and Fantl and McGrath, *Knowledge in an Uncertain World*, 44-45.

³⁹ As many philosophers noted (Nagel, "Knowledge Ascriptions" and "Epistemic Anxiety," Sripada and Stanley, "Empirical Tests of Interest-Relative Invariantism") subjects in high stakes situations think and behave differently than subjects in low stakes ones. As Sripada and Stanley observe, they differ in the ways they gather data, the reasoning process they employ, the exhaustiveness of their search for evidence, and so on. "[T]hese differences are directly relevant

Objection 5. Consider the case of a subject that is in a high-stakes context, believes that she is in a low-stakes context, but has strong evidence for retaining belief even in view of the high stakes. In this case the subject underestimates the importance of being right about whether the believed proposition is true. Therefore, according to (C), she does not know. Nevertheless someone could argue that in such a case the subject knows.

Answer. A first way of solving this problem consists in introducing a modification to (C) able to avoid the counterintuitive consequence of the case. For example, one could suggest to restrict (C) only to situations in which the amount of evidence possessed by the subject does not measure up to the actual level of the subject's stakes. The restricted principle would grant that the subject in the given case knows the relevant proposition, for even if she were to underestimate the importance of being right about whether the believed proposition is true, her level of evidence would measure up to her actual high-stakes level. Therefore, in such a circumstance (C) would not apply. An alternative reply, which I favour, consists in biting the bullet and accepting the conclusion that the subject in such a case does not know. Speaking for myself, in the described case I do not have the intuition that the subject knows. After all, even if she possesses a very high level of evidence supporting the relevant proposition (say p) and believes that p , it

to the truth conduciveness of their respective inquiries" (Sripada and Stanley, "Empirical Tests of Interest-Relative Invariantism," 9-10). The point is that, for being reliable, a belief must be formed in ways appropriate to the perceived stakes in the situation: in high stakes situations the subject, for being reliable, must use evidence-gathering strategies that are more thorough and accurate than those in low stakes situations. In sum, the perception of stakes affects reliability, in the sense that a process of belief formation, for being reliable, must be formed on an appropriate psychological reaction to the perception of stakes. This, in conjunction with (C), solves the problem considered above. Nagel suggested a similar solution to the problem ("Knowledge Ascriptions," 291-292 and "Epistemic Anxiety," 419-420). According to Nagel, "if someone is in a high-stakes situation and declines to pursue readily available evidence on a question that should be provoking high epistemic anxiety, it would be natural for us to attribute to him some desire or condition overshadowing his natural desire for increased cognitive effort. If we see this condition as the basis of his belief, then his judgment may naturally seem less reliable than the judgment of his low-stakes counterpart" ("Epistemic Anxiety," 419). However, Nagel's proposal connects the reliability of the process directly to the objective practical situation, without the mediation of a principle such as (C). This, as Sripada and Stanley observed, reduces her proposal to a disguised version of *SSI*. The solution of Nagel diverges also in other respects from mine. For criticisms of Nagel's proposal see, in particular, Fantl and McGrath, *Knowledge in an Uncertain World*, 44-46 and Sripada and Stanley, "Empirical Tests of Interest-Relative Invariantism," 20-22. None of these criticisms applies to my solution.

seems that the belief is not grounded on sufficiently solid bases given the subject's inappropriate perception of her practical situation. In fact, if the subject were to realize the importance of being right about whether p in her situation, surely she would also realize that her belief was based on inappropriate considerations about her practical environment, and would revise the grounds on which her belief is based in order to meet the perceived importance of the situation. The latter process could also be described as a belief-revision in which an unreliably formed belief that p would be substituted by a new reliably formed belief in the same proposition, where the reliability or unreliability of the belief-formation and retention's processes would be partially a factor of whether the subject correctly perceives the relevance of her practical situation.⁴⁰

5. Summary and Conclusion

In this article I suggested a new explanation of a set of cases in which a difference in knowledge occurs in subjects who apparently differ exclusively with respect to their practical situation. The suggested explanation accounts disjunctively for two types of cases: on the one hand, the cases in which the subject is aware of what is at stake for her in being right about what she believes are explained in terms of psychological reactions of the subject in response to the aware consideration of her practical situation (*CSM*). On the other hand, cases in which the subject is ignorant of the importance of being right in her situation are explained by means of a condition on knowledge according to which a subject knows a given proposition p only if she does not underestimate the importance of being right about whether p .

I argued that my explanation retains a number of advantages on other non-intellectualist invariantist explanations such as *SSI*: the former has at least the

⁴⁰ Of course, the latter approach needs important qualifications. There are cases in which the subject slightly underestimate the importance of being right about a matter, but nevertheless, intuitively, knows the relevant proposition. Imagine a subject in a moderate stakes context (higher than low stakes, lower than high). She'll not be able to pay a small bill if she doesn't cash her cheque at the bank, but she won't go bankrupt. Imagine she has excellent evidence that the bank is open on Saturday. But she's also a little careless and underestimates how pressing her practical situation is: she thinks it's low stakes when actually it's moderate stakes. She doesn't meet my condition for knowing, but intuitively she knows. These sorts of problems can be avoided introducing a minor modification to (C): S knows that p only if S does not *significantly* underestimate the level of importance of being right about whether p in S's actual circumstance. There is then the further question about what makes an underestimation significant, but this issue can be solved considering intuitive verdicts one would give in particular cases. Thanks to Robin McKenna for helpful comments on this point.

same explanatory power of the latter, but preserves an intellectualist account of knowledge and escapes several problems affecting *SSI*. My explanation also retains the advantages of a psychological explanation of the cases (like *CSM*), such as its intuitive plausibility and the ability to account for dynamics of change of epistemic conditions in variations from high-stakes to low-stakes contexts. The suggested explanation also preserves the intuition that the failure of knowledge in ignorant and non-ignorant High Stakes cases is due to different factors.^{41, 42}

⁴¹ As said in footnote 7, in this article I have not considered how my explanation fares with variantist explanations compatible with the verdicts about the considered cases, such as those provided by epistemic contextualism and contrastivism. My more modest aim in this article has been to argue for the superiority of my explanation over other non-intellectualist invariantist explanations. I leave the comparison of my explanation with other variantist ones to future works.

⁴² I would like to thank Julien Dutant, Jie Gao and Robin McKenna for helpful comments on earlier versions of this paper. A very early version of this paper was presented in 2011 at the conference “The Pragmatic Load in Knowledge,” Blonay (Switzerland). Thanks to the audience for their comments, and in particular to Julien Dutant, Pascal Engel, Jeremy Fantl and Jason Stanley. The work on this paper was supported by the SNSF research project ‘Knowledge-based Accounts of Rationality.’

EPISTEMIC RESPONSIBILISM AND MOOREAN DOGMATISM

Martin GRAJNER

ABSTRACT: In this paper, I defend Moorean Dogmatism against a novel objection raised by Adam Leite. Leite locates the defectiveness of the Moorean reasoning explicitly not in the failure of the Moorean argument to transmit warrant from its premises to its conclusion but rather in the failure of an epistemic agent to satisfy certain epistemic responsibilities that arise in the course of conscious and deliberate reasoning. I will first show that there exist cases of Moorean reasoning that are not put into jeopardy by the considerations that Leite presents. Second, I will argue that certain commitments of Leite's concerning the notion of warrant are in tension with his verdict that the Moorean reasoning is defective.

KEYWORDS: Moorean dogmatism, immediate justification, inferential justification, James Pryor, Adam Leite

Introduction

Dogmatists such as Pryor maintain that perceptual experiences warrant us immediately in believing propositions about the external world.¹ Pryor takes this to mean that it is not a precondition that, in order for an epistemic agent to be warranted perceptually in believing a proposition *p*, the agent is in need of antecedent and independent warrant to believe something else. In particular, Pryor has in mind that an agent is not in need of antecedent warrant to believe the denials of skeptical possibilities or hypotheses that are incompatible with the truth of *p*, such as the hypothesis that the agent is a brain-in-a-vat deceived by an evil scientist. The view that perceptual experiences warrant us in believing propositions about the external world without the need of any antecedently warranted attitudes concerning the non-obtaining of certain skeptical possibilities has been called by Pryor 'liberalism.'² The opposing view, entitled 'conservatism,'

¹ See James Pryor, "The Skeptic and the Dogmatist," *Noûs* 34 (2000): 517–49; James Pryor, "What's Wrong With Moore's Argument?" *Philosophical Issues* 14 (2004): 349–78; and James Pryor, "There is Immediate Justification," in *Contemporary Debates in Epistemology*, eds. Matthias Steup and Ernest Sosa (Malden, MA: Blackwell, 2005), 181–202.

² See James Pryor, "When Warrant Transmits," in *Wittgenstein, Epistemology and Mind: Themes from the Philosophy of Crispin Wright*, ed. Annalisa Coliva (Oxford: Oxford University Press, 2012), 269–303; and James Pryor "What's Wrong With Moore's Argument?" *Philosophical Issues* 14 (2004): 349–78.

most notably associated with the writings of Crispin Wright, maintains that an epistemic agent is in need of such antecedent warrant in order to be justified via a perceptual state.³ The dogmatist or liberalist view seems to entail that a certain type of *argument* is suitable for gaining warrant to believe anti-skeptical conclusions. Very roughly, if an agent has (1) the perceptual experience that there is a hand in front of her and she is not in a mental state that defeats the warrant resulting from this experiential state, then the agent is *prima facie* warranted in believing (2) that there is a hand. However, the proposition that the epistemic agent has a hand entails that she is not a brain-in-a-vat deceived by an evil scientist. If one further assumes that warrant is closed under known entailment, the epistemic agent thereby seems to have warrant to believe (3) that she is not a brain-in-a-vat as well. But, according to Pryor, the Moorean argument only entails that an agent has propositional warrant to believe its conclusion. In order to be *doxastically* warranted in believing the conclusion of the Moorean argument (3), further conditions need to be satisfied. For instance, when an agent doubts that (3) obtains, given other beliefs (warranted or not) she might happen to have, then engaging in the deduction might not be a way for her to gain a doxastically warranted belief in the conclusion of the Moorean argument. In this case, the doubts that the agent happens to have rationally obstruct her in adopting a belief in (2) and thereby in the conclusion (3) of the Moorean argument.⁴

A lot of ink has been spilled on whether the Moorean argument itself and the reasoning that this argument seems to license are really epistemically satisfactory.⁵ Adam Leite has suggested in a recent paper that the reasoning the

³ There is space in between these positions. See Annalisa Coliva, "Moore's Proof, Liberals and Conservatives. Is There a Third Wittgensteinian way?" in *Mind, Meaning, and Knowledge: Themes from the Philosophy of Crispin Wright*, 323–351 for a 'Wittgensteinian' alternative.

⁴ Moreover, Pryor and others have pointed out that the Moorean argument should not be confused with other, more ambitious things it might be thought to accomplish. For instance, Pryor maintains in "What's Wrong" that the reasoning from (1) and (2) to (3) should not be understood as being suitable for *convincing someone who doubts its conclusion*. Martin Davies has argued that the Moorean argument should not be conceived of as being able *to settle the question of whether (3) is indeed the case*. See Martin Davies, "Two Purposes of Arguing and two Epistemic Projects," in *Minds, Ethics, and Conditionals: Themes From the Philosophy of Frank Jackson*, ed. Ian Ravenscroft (Oxford: Oxford University Press, 2009), 337–383.

⁵ Crispin Wright famously maintains that the Moorean argument suffers from transmission failure. See, for example, Crispin Wright, "Facts and Certainty," *Proceedings of the British Academy* 71 (1985): 429–72; Crispin Wright, "(Anti-)Sceptics Simple and Subtle: G. E. Moore and John McDowell," *Philosophy and Phenomenological Research* 65 (2002): 330–348; Crispin Wright, "Warrant for Nothing (and Foundations for Free?)," *Aristotelian Society Supplementary*

Moorean argument licenses is epistemically unsatisfactory in a novel kind of way.⁶ Leite locates the defectiveness of the Moorean reasoning explicitly not in the failure of the Moorean argument to transmit warrant from its premises to its conclusion, as others have done before, but rather in the failure of an epistemic agent to satisfy certain epistemic responsibilities that arise in the course of conscious and deliberate reasoning.⁷ According to Leite's diagnosis, if an epistemic agent consciously and deliberately reasons from (1) to (2) and from (2) to (3), this reasoning isn't a way for her to gain a doxastically warranted belief in (2) and (3). Leite maintains that the agent doesn't arrive at a doxastically warranted belief in (2) and (3) because the agent lacks properly warranted beliefs concerning the non-obtaining of certain disabling conditions in order for (1) to confer warrant on (2). In particular, in order to arrive in an epistemically satisfactory way at the conclusion of the Moorean argument via a process of conscious reasoning, the agent needs to have a *warranted belief* that (3) does indeed obtain, because the falsity of (3) would rob (1) of its force to warrant (2). But since the agent does not have a warranted belief in (3), Leite concludes that the agent behaves epistemically irresponsibly in performing this deduction.

In this paper, I will assess Leite's diagnosis of the alleged shortcoming of the reasoning that seems to be licensed by the Moorean argument. The upshot of my discussion will be that there exist cases of Moorean-style reasoning that are apt for providing an agent with doxastically warranted beliefs in the conclusion of the Moorean argument and that are not put into jeopardy by the considerations that Leite presents. Thus, I will conclude that Leite hasn't made the case that the Moorean reasoning is defective in a sense that threatens the dogmatist. Moreover, I will show that Leite's verdict that the epistemic agent behaves epistemically irresponsibly if she were to reason from (1) to (3) is in tension with what Leite says about the properties of warranting states.

Volume 78 (2004): 167–212; and Crispin Wright, "The Perils of Dogmatism," in *Themes from G. E. Moore*, eds. Susana Nuccetelli and Gary Seay (Oxford: Oxford University Press, 2007), 25–47.

⁶ See Adam Leite, "Immediate Warrant, Epistemic Responsibility, and Moorean Dogmatism," in *Reasons for Belief*, eds. Andrew Reisner and Asbjørn Steglich-Petersen (Cambridge: Cambridge University Press, 2011), 158–179.

⁷ See for an overview of the literature on transmission failure Luca Moretti and Tommaso Piazza, "Transmission of Justification and Warrant," in *The Stanford Encyclopedia of Philosophy (Spring 2013)*, ed. Edward Zalta, <http://plato.stanford.edu/archives/win2013/entries/transmission-justification-warrant> and Chris Tucker, "Transmission and Transmission Failure in Epistemology," in *Internet Encyclopedia of Philosophy*, <http://iep.utm.edu/transmis/>, July 30, 2015.

My paper is organized as follows. In the first section, I will briefly outline Leite's main commitments concerning the notion of warrant and the conditions that an agent needs to satisfy in order to behave in an epistemically responsible way if she engages in conscious and deliberate reasoning. In the second section, I will recapitulate why Leite maintains that an agent is to be epistemically blamed if she reasons according to the Moorean argument. In the third section, I will present two cases that call into question Leite's verdict that epistemic agents are to be blamed if they reason according to the Moorean argument. Finally, in the fourth section, I will pursue my second line of criticism. As already indicated above, I will make the case that Leite's verdict regarding the Moorean reasoning is inconsistent with what he says about the nature of warranting states.

1. Leite on Warrant and Epistemic Responsibility

Leite assumes that warrants are states that count in favor of believing a given proposition. If warrants are supposed to play this role, they must satisfy certain further conditions. In his paper, Leite introduces the following five characteristics of warranting states.⁸ First, Leite maintains that warrants are states or conditions that an agent can become *aware of*. Second, though this first commitment seems to imply that Leite is committed to a certain form of internalism concerning warrants, he nonetheless maintains that warranting states or conditions are not confined to the psychological states of an epistemic agent or that they should be accessible through introspection alone. Leite claims that mind-independent facts or certain worldly conditions may play the role of warrants as well. Third, warrants are, according to Leite, normative epistemic reasons. This is supposed to mean that, if an agent is warranted in believing *p*, the appropriate doxastic response for the agent, given his warrant, is to believe *p*. Fourth, Leite is of the view that warrants can play the role of normative epistemic reasons since they make it likely that the contents they speak in favor of do indeed obtain. In contrast to Pryor and other participants in the debate concerning Moore's argument, Leite explicitly acknowledges that our ordinary practice suggests that warrants must indeed be conceived of as being reliable. He backs this claim up in the following way:

Suppose that someone is brought up to predict the outcomes of battles by reading tea leaves, a method endorsed by everyone in his community. Neither he nor anyone in his community is in a position to understand the considerations showing that there is no reliable connection between the arrangement of leaves in tea cups and the outcomes of battles. This person performs blamelessly if he

⁸ See Leite, "Immediate Warrant," 161–163.

infers from considerations about tea leaves that a battle will turn out a certain way; he has done everything that can reasonably be demanded of him in order to form a true belief. But at the same time, we feel that there is a shortcoming here. We might say, 'His training and circumstances are unfortunate. He really shouldn't believe on that basis that the battle will turn out a certain way; no one should. Regardless of what he thinks, considerations about tea leaves don't actually provide any reason to believe anything at all about the outcomes of battles.' When we make judgments like this, what seems to be motivating us is the thought that there is not in fact the right sort of connection between arrangements of tea leaves and the outcomes of battles: the one is not a reliable indicator of the other, and as a result the belief about the outcome of battle is not warranted.⁹

However, to come to Leite's fifth major commitment concerning the notion of warrant, he acknowledges that warrants may fail to exert their power to warrant particular propositions or beliefs. In case certain "disabling conditions" obtain, as Leite calls them, believing a particular proposition *p* is not normatively the right thing to do, given the putative warrant in question. Leite provides the following example to illustrate this point. If human physiology were such as that taking ibuprofen would not alleviate pain, then an epistemic agent that remembered that she just recently took an ibuprofen to be relieved of her headache would not be warranted in believing that her pain is going to lessen. Because if human physiology really were such that taking ibuprofen wouldn't relieve pain, remembering taking ibuprofen wouldn't be a reliable indicator for the truth of the proposition that an agent's pain is going to be relieved. Leite takes a disabling condition to be an objective state in the world that calls into question that a given warranting state is a reliable indicator of the truth of its content. If a disabling condition obtains, then it is not appropriate for an epistemic agent in the normative sense to adopt a doxastic attitude toward the content that is warranted by the warranting state. Leite stresses, however, that disabling conditions should not be confused with defeaters. A defeater is, as Leite explains, a condition or state such that it defeats "the *prima facie* or defeasible warrant provided by a particular warranting state or condition."¹⁰ In contrast to a disabling condition, a defeater does not call into question that a given warranting state is a reliable indicator of the truth of a particular content *per se*. A disabling condition, however, would prevent a warranting state or condition from providing *prima facie* warrant in principle.

⁹ Leite, "Immediate Warrant," 162.

¹⁰ Leite, "Immediate Warrant," 163.

Besides these five commitments concerning the nature of warrant, Leite outlines a proposal with respect to the conditions that an agent needs to satisfy in order to obtain *doxastically warranted beliefs* via processes of conscious and deliberate reasoning. He proposes two conditions that an epistemic agent needs to satisfy in order to obtain doxastically warranted beliefs via processes of conscious reasoning. First, Leite maintains that doxastic justification is an epistemic status that should be conceived of as intimately related to epistemically responsible behavior, and that in order to behave epistemically responsibly, an agent must satisfy certain further conditions than just being in possession of a warranting state. Most writers assume that an epistemic agent needs to satisfy some basing requirement if she is to obtain a doxastically warranted belief. However, Leite urges, that, in addition to the basing requirement, the agent needs to have beliefs that a particular warranting state *W* *indeed speaks in favor of the content that is warranted by W*. Leite introduces the following principle with respect to the conditions that an epistemic agent needs to satisfy in order to obtain a doxastically warranted belief via processes of conscious reasoning:

When in the course of explicit, conscious deliberation or reasoning one bases a belief that *p* upon a particular warranting state or condition *W*, that belief will not be formed or held responsibly unless one takes *W* to support (defeasibly tell in favor of) the truth of *p*.¹¹

But Leite remarks that the beliefs that the agent needs to possess concerning the support relation between the warranting state or condition and the respective propositional content only need to be dispositional or implicit. If the beliefs in question were supposed to be occurrent, it would be obvious, as Leite himself acknowledges, that he would be imposing conditions too strong to be satisfied by ordinary epistemic agents.

Second, Leite introduces another principle that is closely associated with the principle just mentioned. It concerns how an epistemic agent needs to be situated vis-à-vis the aforementioned disabling conditions in order to obtain a doxastically warranted belief through processes of conscious reasoning. Let Π stand for such a disabling condition for warrant *W*. Leite says:

Suppose that you base your belief that *p* upon *W*. As I've just argued, this requires you to believe that *W* tells (at least defeasibly) in favor of the truth of *p*. And suppose that you recognize that Π 's obtaining would prevent *W* from even defeasibly telling in favor of the truth of *p*. Then, you are rationally required to believe also that Π does not obtain, at least if you consider the question. For given that you recognize the incompatibility between Π 's obtaining and *W*'s

¹¹ Leite, "Immediate Warrant," 165.

defeasibly telling in favor of the truth of p , requirements of consistency preclude you from endorsing both the claim that Π obtains and that W tells in favor of the truth of p , and they also preclude you from endorsing the claim that W tells in favor of the truth of p while suspending judgment or forming no opinion at all about whether Π obtains. So if you consider the question at all, you are rationally committed to endorsing the claim that Π does not obtain.¹²

According to Leite, if the epistemic agent does not believe that Π does not obtain in case he takes W to speak in favor of believing a particular proposition p and considers the question as to whether Π obtains, then the agent behaves in an epistemically inappropriate way. But, in addition, as Leite urges, an epistemic agent needs to possess a *doxastically warranted belief* to the effect that Π does not obtain. This further requirement is supposed to result from what it means to believe something responsibly. Thus, the principle of Leite's that specifies the constitutive conditions that an agent needs to fulfill in order to obtain warranted beliefs through processes of conscious and deliberate reasoning can be stated as follows:

(DR) In order for S to behave in an epistemically appropriate way when S bases her belief in p upon a particular warranting state W in the course of conscious reasoning, for every disabling condition Π that S *explicitly considers* (and recognizes to be a disabling condition), (i) S needs to believe that Π does not obtain, and (ii) this latter belief needs to be doxastically warranted as well.

Leite qualifies this principle. First, according to him, this requirement only applies to cases in which an agent forms a belief p through *processes of conscious reasoning*. Fulfillment of the conditions laid down in (DR) is not supposed to be a necessary precondition for an epistemic agent to be warranted immediately or non-inferentially via a perceptual state. Leite follows Pryor by claiming that an epistemic agent can be warranted immediately in believing a particular proposition without having any beliefs whatsoever concerning the non-obtaining of certain disabling conditions. Second, this principle is limited to those possibilities that the agent *explicitly considers*. Though Leite is not explicit about it, I take it that explicitly considering a skeptical possibility Π amounts to adopting an occurrent attitude toward this possibility (like believing Π or treating Π as an open question) and acknowledging that Π would disable a particular warranting state W to confer warrant on a given belief p . It seems plausible that possibilities toward which the agent does not have any occurrent attitudes, and very likely also those in whose obtaining the agent places low confidence, are not supposed to be possibilities with respect to which an agent needs to have any warranted attitudes

¹² Leite, "Immediate Warrant," 167.

in order to behave epistemically responsibly. Third, this requirement only concerns *disabling conditions* and not defeaters. It is important to bear these qualifications in mind, because I will argue next that the second of these qualifications creates a problem for Leite's verdict as to why the Moorean reasoning goes wrong.

2. What's Wrong with the Moorean Reasoning According to Leite

How does Leite's position thus far about warrant and epistemically appropriate behavior bear on the reasoning that seems to be licensed by the Moorean argument? Leite himself acknowledges that dogmatists such as Pryor don't conceive of the Moorean argument as providing *doxastic warrant or justification* to believe its conclusion just in virtue of the relation between its propositions (1) through (3). However, Leite claims that if the Moorean argument were to be employed by an epistemic agent to obtain guidance in what to believe about the possibility of whether or not she happens to be a brain-in-a-vat being fed with experiences by an evil scientist, she would behave in an epistemically irresponsible way. Leite maintains that our verdict as to why the agent behaves epistemically irresponsibly stems from the fact that the agent fails to satisfy the conditions as laid down in principle (DR). He says:

For consider how the responsibilist view sketched above would regard this reasoning. That view allowed that a visual experience as of your hands provides immediate warrant for the belief that you have hands. However, being a disembodied spirit deceived by an evil demon would be a disabling condition for that warrant. Suppose, then, that you recognize that this is so (though perhaps not in so many words). You are in the position specified by the dogmatist's thesis. You are deliberating about whether to believe, on the basis of your visual experience, that you have hands. Suppose that you go ahead and form this belief on this basis. According to the responsibilist view, the belief will not be responsibly held, since you do not yet believe that you are not a disembodied spirit under an evil demon's sway. (That latter belief is supposed to be arrived at only in the next stage in the reasoning.) Since the belief that you have hands would not be responsibly held under such circumstances, it also wouldn't be doxastically justified. And if you go on to infer from it that you are not a disembodied spirit under an evil demon's sway, that latter belief will not be doxastically justified either.¹³

As Leite sets it up, when an epistemic agent starts to reason in accordance with the Moorean argument, the agent *explicitly considers* at the beginning of this reasoning the possibility that she might be a brain-in-a-vat deceived by an evil

¹³ Leite, "Immediate Warrant," 171.

scientist. Leite seems to assume that the agent does not merely entertain or just contemplate this possibility but indeed places some confidence in it or treats it as an open question. Moreover, the agent realizes that if this brain-in-a-vat possibility were to obtain, her visual experiences would not count in favor of believing propositions about the external world since the skeptical hypothesis is a disabling condition in order for (1) to confer warrant on (2). However, since the epistemic agent has no belief that this possibility does not obtain (and thereby trivially no *doxastically warranted* belief that it does not obtain), the agent fails to satisfy the clauses (i) and (ii) of the principle (DR). Thus, the agent behaves epistemically irresponsibly if she were to believe (2) on the basis of (1) and go on to infer the conclusion (3) of the Moorean argument.

3. Two Ways in Which an Agent Might Acquire a Doxastically Justified Belief Through Moorean-Style Reasoning

In the introduction to this paper, I briefly described what Pryor thinks regarding when an agent might end up with a doxastically warranted belief in the conclusion of the Moorean argument. Pryor says concerning Stewart Cohen's red wall argument – a different, though structurally identical, argument to Moore's:

A subject can have some justification to believe P, but be unable to rationally believe P on the basis of that justification, because of some (unjustified) beliefs and doubts he also has. Consider again your belief that your color vision is defective. Suppose that this belief is unjustified (but you don't realize it). Because you don't have justification to doubt your color vision, I don't think the justification you get from your color experiences will be undermined. You'll still have justification to believe the wall is red. But your actual doubt will rationally obstruct you from relying on your color experiences. It'll prevent you from rationally accepting that justification. (...). Unjustified beliefs and doubts may have no undermining effect on what propositions you have justification to believe; but for your beliefs to be well-founded, it's not enough that they be beliefs in propositions you have justification to believe. They also have to be based on that justification, and they have to be rational beliefs. Suppose you believe P, on the basis of what are in fact good reasons for believing P. But you also have doubts that rationally oppose P, or rationally obstruct you from believing P for the reasons you do. Those doubts will render your belief in P irrational even if they don't affect your justification to believe it. And if your belief in P is irrational, then it can't be a justified or well-founded belief.¹⁴

Pryor claims in this quote that, in order for an epistemic agent to obtain a doxastically justified or warranted belief in p, the agent needs (i) to satisfy some

¹⁴ Pryor, "When Warrant," 365.

basing requirement and (ii) believing p needs to be rational from the perspective of the agent.¹⁵ To apply these requirements to the Moorean argument, if an agent indeed believes that she is deceived by an evil demon (with or without warrant) and goes on to believe (2) and then infers the conclusion of the Moorean argument, she fails to satisfy condition (ii), since the belief in the skeptical possibility obstructs her from taking her perceptual experience as evidence for beliefs about the external world. So, in this kind of case, the epistemic agent will not end up with doxastically warranted beliefs in (2) or (3). However, Pryor urges that this does not imply that there is anything wrong with the Moorean argument itself. Moreover, though Pryor does not state this explicitly in the quote above, his position might be understood as such that if the agent *did not have the beliefs that she in fact has when she is rationally obstructed in believing p* , she might be in a position to obtain a doxastically warranted belief in the conclusion of the Moorean argument if she were to competently perform the deduction.¹⁶ I will now make the case that this is exactly the sense in which the Moorean reasoning is not invalidated by the considerations that Leite presents.

As shown in the presentation of Leite's criticism of the Moorean reasoning, Leite thinks that when an epistemic agent engages in this reasoning, the agent seems to *explicitly consider* a skeptical possibility Π that is a disabling condition in order for (1) to confer warrant on (2). Like I mentioned above, explicitly considering a skeptical possibility presumably amounts to adopting an occurrent attitude toward this possibility Π (like believing that Π obtains or treating Π as an open question) and acknowledging that Π would disable a particular warranting state W to confer warrant on a given belief in p . Since the agent lacks any doxastically warranted beliefs that Π does not obtain, in case she starts to reason according to the Moorean argument, Leite urges that the agent fails to satisfy the conditions laid down in principle (DR) and thus behaves in an epistemically irresponsible way. But does Leite's verdict equally apply when an epistemic agent *does not consider* this possibility explicitly (i.e., when the agent does not adopt any occurrent attitude toward Π)? In cases like these, the agent should not be considered as behaving in an epistemically irresponsible way in light of Leite's principle (DR). Let's consider one such case.

¹⁵ I assume that condition (ii) is just a requirement that is constitutive for *having* a justified belief that p .

¹⁶ For a defense of the claim that the Moorean argument is suitable for gaining doxastic justification or warrant to believe its conclusion see Tim Willenken, "Moorean Responses to Skepticism: A Defense," *Philosophical Studies* 154 (2011): 1–25.

(Nigel No Disabling) Nigel has (1) the perceptual experience of there being a hand in front of him, and he doesn't envisage or consider the possibility of whether he might be a brain-in-a-vat deceived by an evil scientist. Suppose he bases his belief in (2) that there is indeed a hand in front of him on this experience and goes on to believe that there is a hand in front of him. Now he reasons in the following way. 'If it is indeed the case that I have a hand, then I am not a brain-in-a-vat deceived by an evil scientist. Since I have reason to believe that there is a hand in front of me, I also seem to have thereby reason to believe (3) that I am not a brain-in-a-vat deceived by an evil scientist. Thus, I should indeed believe that I am not a brain-in-a-vat deceived by an evil scientist.' Nigel places no credence in the skeptical hypothesis when he formed his belief in (2) or treats it as an open question. He also has no beliefs that would otherwise rationally obstruct him from believing things about the external world. He then goes on to believe (3) based on his belief that (2) entails (3), his competent deduction of (3) from (2), and his recognition that (1) warrants (2).

In *(Nigel No Disabling)*, Nigel does not consider the possibility that he might be deceived by an evil scientist when he goes on to form a belief in the proposition that there is a hand in front of him. In this case, the conditions that Leite has introduced in his principle (DR) do not need to be fulfilled, since this principle only applies to possibilities that the agent *explicitly considers* when forming a belief on the basis of a warranting state. As I interpret Pryor and as I have already insinuated above, cases like *(Nigel No Disabling)* should be conceived of as cases in which an agent can indeed obtain a doxastically justified belief through a process of reasoning in accordance with the Moorean argument (of course, given that the scenario is as described in *(Nigel No Disabling)*). So *(Nigel No Disabling)* does not seem to be a case that should be classified as a case of epistemically irresponsible behavior, even in light of the conditions laid down in Leite's principle (DR). Thus, Leite cannot claim that an agent who engages in the reasoning under the specified conditions is to be epistemically blamed.

However, might Leite not object that when the agent moves from (2) to (3), that Nigel explicitly considers a disabling condition for (1) to confer warrant on (2) and that believing (2) is retrospectively, so to speak, irresponsible in light of this disabling condition?¹⁷ I don't think that this is a plausible description of the case at hand because, in order to explicitly consider the possibility that he is fed with experiences by an evil scientist when he moves from (2) to (3), Nigel needs to adopt some attitude toward this possibility, i.e., place some confidence in this possibility or treat this possibility as an open question (and, of course, recognize

¹⁷ Thanks to Jim Pryor for pressing me to address this worry.

that it would call into question that (1) warrants (2)). But this does not seem to be the case when Nigel teases out what his justified beliefs entail when he moves from (2) to (3). When he moves from (2) to (3) in the scenario described above, he only ends up with an attitude toward the *negation* of this skeptical possibility. In other words, Nigel believes that he is not a brain-in-vat deceived by an evil scientist because of his recognition that (2) entails (3), his competent deduction of (3) from (2), and his recognition that he has warrant to believe (2). Thus, in light of principle (DR), he is not in need of having any doxastically warranted beliefs that the affirmation of this skeptical possibility does not obtain in order to behave epistemically responsibly.

Consider now still another case in which an epistemic agent has a perceptual experience of a hand but merely entertains the possibility that she might be deceived by an evil scientist *without being confident* that this possibility might obtain or seriously treating this possibility as an open question. Again, the agent might obtain a doxastically warranted belief in the conclusion of the Moorean argument in light of Leite's principle (DR).

(Nigel Merely Entertaining) Nigel has (1) the perceptual experience of there being a hand in front of him, and he contemplates the possibility that he might be deceived by an evil scientist. However, he doesn't take this possibility very seriously and thus places no confidence in it. Suppose he now bases his belief in (2) a hand being in front of him on his perceptual experience. Now he reasons in the following way: 'If it is indeed the case that I have a hand, then I am not a brain-in-a-vat deceived by an evil scientist. I have reason to believe that there is a hand in front of me. Thus, I also seem to have thereby reason to believe (3) that I am not a brain-in-a-vat deceived by an evil scientist. Hence, there exists a reason why I should believe that I am not a brain-in-a-vat deceived by an evil scientist.' Nigel does not have any other beliefs that would obstruct him from forming a belief in (3), and therefore, he goes on to believe (3).

As with the case considered previously, in light of Leite's principle (DR), (Nigel Merely Entertaining) seems to be a case in which the agent arrives in an epistemically satisfactory way at a warranted belief in (3). Though he entertains the possibility of being deceived, he does not place any confidence in it or treats it as an open question. Thus, he does not need to satisfy the conditions (i) and (ii) of Leite's principle (DR). Moreover, he is not obstructed from his own perspective in gaining a warranted belief in the conclusion of the Moorean argument. So, if an epistemic agent reasons according to the Moorean argument under the conditions specified in this case, he might as well end up with a doxastically warranted belief.

If the cases I have presented so far indicate that an agent might arrive at a doxastically warranted belief in the conclusion of the Moorean argument though

she is not to be blamed in light of Leite's principle (DR), this seems to cast doubt on Leite's diagnosis that there is something amiss with the Moorean reasoning. But might Leite not modify his requirement (DR) somehow to encompass the cases presented? First, let us assume that an agent might not only be in need of warranted beliefs concerning the non-obtaining of disabling conditions that she explicitly considers but also of warranted beliefs that she as a fully rational person *should* explicitly consider. It should be obvious that this modification does not entail that the cases (Nigel No Disabling) and (Nigel Merely Entertaining) are ones of epistemically irresponsible behavior. What possibilities a rational person should consider are foremost determined by her own perspective. But in both cases discussed above, the epistemic agent Nigel happens to have no attitudes that rationally force him, on pain of being incoherent, for example, to place some confidence in the brain-in-a-vat possibility. Thus, it is evident that both cases considered above will not be ruled out by this suggested modified version of (DR).

A second proposal might be that *in every case* in which an agent engages in processes of conscious reasoning, the agent needs to have doxastically warranted beliefs to the effect that skeptical possibilities, such as the brain-in-a-vat hypothesis, do not obtain. If this were Leite's modification of (DR), then both cases (Nigel No Disabling) and (Nigel Merely Entertaining) might be classified as instances of epistemically irresponsible behavior, since the epistemic agent does not possess any doxastically warranted beliefs that the disabling condition does not obtain. However, a principle of this sort is clearly too strong, because it seems to entail that one could rarely, or rather never, arrive at a doxastically warranted belief through a process of conscious reasoning.¹⁸ I assume that Leite wishes to avoid that result as well. Hence, this modification is also not available to him.

In sum, both cases I have presented in this section seem to be apt for providing an epistemic agent with doxastically warranted beliefs in the conclusion of the Moorean argument. However, in light of Leite's principle (DR), there is nothing amiss with these cases, and, hence, the agent does not engage in

¹⁸ Note that Leite's principle (DR) in the modified version discussed here differs from the demands that conservatives such as Wright place on the antecedently warranted attitudes. Wright maintains that, in order to be justified via a perceptual state, an epistemic agent is in need of an *entitlement* to *accept* that a skeptical hypothesis does not obtain (see Wright "Warrant for Nothing"). An entitlement is a distinctively externalist type of positive epistemic status that does not require that the agent be in possession of cognitively accessible reasons. Furthermore, the attitude of accepting a particular proposition differs from an occurrent belief in that an acceptance is more akin to attitudes such as *acting on the assumption that p* or *taking it for granted that p* (see Wright, "Warrant for Nothing," 170–73). Thus, the objections presented here against this revised principle of Leite's do not affect Wright's proposal.

epistemically inappropriate behavior. The reason as to why these cases are not ruled out by Leite's principle (DR) is that the epistemic agent doesn't *explicitly* consider the possibility that he might be deceived by an evil demon and is thus not obliged, at least according to (DR), to have a doxastically warranted belief that this possibility does not obtain. Though I've briefly considered how Leite might revise his principle (DR), I believe I have presented a plausible argument that the prospects for revising (DR) to encompass the cases introduced here are dim.

4. Warrant, Epistemic Normativity, and the Moorean Argument

Now, I turn to another line of criticism regarding Leite's proposal. In the first section of this paper, I summarized Leite's main commitments concerning the notion of warrant. Recall that Leite maintains that (i) warrants are states that *make it likely* that the contents they speak in favor of do indeed obtain. A further property of warranting states is, according to Leite, that they are (ii) *normative reasons* to believe particular propositions. Leite takes this to mean that if an agent is indeed warranted in believing that *p*, then believing *p* is, from a normative perspective, the right thing to do for this agent. Finally, Leite acknowledges (iii) that our experiences do provide us with immediate warrant to believe propositions about the external world. Thus, it is in a normative sense correct for an agent to go on to believe what her perceptual warrants tell her to believe, if she is indeed immediately warranted.

But how do these commitments of Leite's relate to the Moorean argument and the reasoning that seems to be licensed by the argument? On closer inspection, it becomes evident that Leite's view of warranting states has, from Leite's own point of view, some unwelcome consequences with respect to the Moorean argument. If we grant that an agent has immediate warrant to believe a particular proposition *p*, if the agent has the perceptual experience that *p* is the case, then believing *p* is normatively the right thing to do (if the experience of *p* is indeed a warranting state). Moreover, given that a particular warranting state makes it, according to Leite, indeed likely that the propositional contents they warrant are true, this seems to entail that skeptical hypotheses, like the brain-in-a-vat hypothesis, are very likely false. Now, if we further assume that warrant is closed under known entailment and that the normative properties of a particular warranting state transmit to the entailments of the warranted propositions as well, it seems to follow that it is, from a normative perspective, appropriate for the

agent to place some confidence in (3), viz. the proposition that the brain-in-a-vat hypothesis is false.¹⁹

So far, the characteristics of warranting states that Leite has introduced actually seem to entail that it would be *normatively correct to believe* (3), if an agent is immediately warranted in believing (2). Moreover, Leite's commitments concerning the properties of warranting states even appear to entail that the agent is entitled to regard disabling conditions such as the brain-in-a-vat hypothesis as misleading. If perceptual warrants are indeed reliable, the likelihood that a disabling condition such as the negation of (3) really obtains seems pretty low. But recall that Leite urges that if the agent were to engage in a process of conscious reasoning, believing (3) is *epistemically irresponsible* in light of principle (DR). Now, this overall verdict concerning the Moorean argument appears puzzling. How can it be that believing (3) is, on the one hand, epistemically irresponsible – if an agent reasons according to the Moorean argument – when it is, on the other hand, normatively correct to believe (3), given that one is immediately warranted in believing (2) and that an agent is even entitled to treat a disabling condition such as the brain-in-a-vat hypothesis as misleading? (Notice that Leite seems to conceive of the reasoning associated with the Moorean argument as being in principle inapt to gain a warranted belief in its conclusion.) Thus, there seems to exist a tension between the commitments of Leite's concerning the nature of warranting states and his explicit verdict that the Moorean reasoning is defective.

But what are we to make of this tension? The cases I have introduced in the previous section might provide a hint as to what kind of overall position concerning Moorean-style reasoning Leite should adopt given his commitments concerning the properties of warranting states. However, this position seems to be one that dogmatists such as Pryor have recommended all along. Recall that the cases I have introduced are cases in which the epistemic agent is rationally unobstructed in engaging in the Moorean reasoning and is, thus, able to end up with a doxastically warranted belief in the conclusion of the Moorean argument. If we consider the cases I have introduced in light of what Leite says about the properties of warranting states, it is apparent that Leite's claim that it is normatively correct to believe (2) and (3) if one is immediately warranted in believing (2) is in line with the view that an agent might acquire a warranted belief in the conclusion of the Moorean argument. Given that an agent is warranted in believing (2) and that he is rationally unobstructed in placing some

¹⁹ Note that Leite does not assume that the Moorean argument suffers from transmission failure or that warrant is not closed under known entailment.

confidence in (2), engaging in the Moorean reasoning and placing some confidence in (3) is what the agent is required to do, given the normative properties of warranting states. Moreover, because Leite's commitments concerning the properties of warranting states further entail that disabling conditions like the brain-in-a-vat hypothesis very likely do not obtain, the agent even seems to be entitled to treat this possibility as misleading. Hence, in cases such as those outlined above, believing (3) is the right thing to do for the agent, given that she is immediately warranted.

However, in case the agent is rationally obstructed in believing (2), such as when she explicitly considers a disabling condition for (1) to warrant (2) and places some confidence in this disabling condition, engaging in the Moorean reasoning is epistemically irresponsible, and the agent is thus not able to acquire a doxastically warranted belief in the conclusion of the Moorean argument. Thus, if we assume that there exist these two ways an agent might be situated vis-à-vis disabling conditions such as the brain-in-a-vat hypothesis, it is evident that the tension between Leite's commitments concerning the notion of warrant and his official verdict with respect to the Moorean argument dissolves. Reasoning according to the Moorean argument is apt for gaining a doxastically warranted belief in its conclusion, as Leite's commitments concerning the notion of warrant seem to entail, only in case the agent is not rationally obstructed in placing any confidence in the contents of the premises of the Moorean argument. By contrast, if an agent is rationally obstructed in placing any confidence in (2) or (3), for example, reasoning according to the Moorean argument is not a way to gain a doxastically warranted belief in (3). In this case, it would be irrational from the perspective of the agent to place any confidence in the conclusion. So I am tempted to think that Leite's own commitments concerning the notion of warrant actually reinforce the claim that there should exist ways an agent might end up with a doxastically warranted belief in the conclusion of the Moorean argument. I take this to be further evidence supporting the claim that the Moorean reasoning is apt for gaining doxastically warranted beliefs in propositions concerning the negation of skeptical possibilities.

Conclusion

In this paper, I have presented two objections to Leite's claim that reasoning according to the Moorean argument is epistemically unsatisfactory. First, I have showed that cases of Moorean reasoning exist that do not satisfy the conditions laid down in Leite's principle (DR) and should thus not be considered instances of epistemically inappropriate behaviour. Second, I have teased out a tension

between Leite's commitments concerning the property of warranting states and his claim that Moorean reasoning is defective. I believe Leite has not made the case that Moorean reasoning is epistemically defective in a sense that threatens the dogmatist.²⁰

²⁰ The paper was written during my stay as an academic visitor at NYU's Department of Philosophy in the academic year 2013/14. I would like to thank Jim Pryor for very helpful feedback on a previous draft of this paper. Research for this paper was supported by the German Academic Exchange Service (DAAD). I would like to thank the DAAD for their very generous support.

TWO NEW COUNTEREXAMPLES TO THE TRUTH-TRACKING THEORY OF KNOWLEDGE

Tristan HAZE

ABSTRACT: I present two counterexamples to the recently back-in-favour truth-tracking account of knowledge: one involving a true belief resting on a counterfactually robust delusion, one involving a true belief acquired alongside a bunch of false beliefs. These counterexamples carry over to a recent modification of the theory due to Rachael Briggs and Daniel Nolan, and seem invulnerable to a recent defence of the theory against known counterexamples, by Fred Adams and Murray Clarke.

KEYWORDS: knowledge, truth-tracking, counterexamples

In recent years Nozick's notion of knowledge as tracking truth has witnessed a revival. - Horacio Arló-Costa.¹

Here I present two counterexamples to the truth-tracking theory of knowledge. As far as I have been able to tell, they are new. These counterexamples seem called-for in view of a recent defence and a recent modification of the theory (addressed below).

The simple version of Nozick's famous truth-tracking account runs as follows:²

S knows that p iff

1. p is true.
2. S believes that p .
3. If p weren't true, S wouldn't believe that p
4. If p were true, S would believe that p

¹ Horacio Arló-Costa, "Review of *Tracking Truth: Knowledge, Evidence and Science*, by Sherrilyn Roush," *Notre Dame Philosophical Reviews*, July 20, <https://ndpr.nd.edu/news/25079-tracking-truth-knowledge-evidence-and-science/>.

² Robert Nozick, *Philosophical Explanations* (Cambridge: Harvard University Press, 1981).

Counterexample 1: I have a deep-seated, counterfactually robust delusional belief that my neighbour is a divine oracle. He is actually a very reliable and truthful tax-lawyer. There is a point about tax law he has always wanted to tell me, p . One day, he tells me that p , and I believe him, because I believe he is a divine oracle. I would never believe him if I knew he was a lawyer, being very distrustful of lawyers.

In this case, it seems to me, I do not *know* that p : my belief rests on a delusion, albeit a counterfactually robust one. But it is true, I believe it, and my belief tracks the truth: if it were true, I would have believed it, and if it were false, I would not have believed it. (The lawyer, being reliable and truthful about tax law, would not have told me that p if p were not the case.)

Counterexample 2: My neighbour is a tax lawyer. Here, unlike in the previous counterexample, I have no delusional belief. It is my neighbour who is the strange one: for years, he has intently nurtured an eccentric plan to get me to believe the truth about whether p , where p is a true proposition of tax law, along with five *false* propositions about tax law. His intention to do this is very counterfactually robust. He moves in next door and slowly wins my trust. One day, he begins to regale me with points of tax law. He asserts six propositions: p and five false ones. I believe them all.

It seems to me that I do not know that p in this case either. But I believe it, it is true, and my belief tracks the truth: if p were the case, I would have believed it, and if p were not the case, I would not have believed it (remember, the tax lawyer has long been anxious that I believe the truth about whether p).

These counterexamples can easily be seen to carry over to Nozick's more complicated method-relativized version of the account, since there is only one method in question in each case. That version goes *via* an account of knowing-by-a-method which runs as follows:³

S knows, via method (or way of knowing) M, that p iff

1. p is true
2. S believes, via method M, that p
3. If p weren't true, and S were to use M to arrive at a belief whether (or not) p , then S wouldn't believe, via M, that p
4. If p were true, and S were to use M to arrive at a belief whether (or not) p , S would believe, via M, that p .

³ Nozick, *Philosophical Explanations*, 179.

Two New Counterexamples to the Truth-Tracking Theory of Knowledge

They also carry over straightforwardly to the recent account of Rachael Briggs and Daniel Nolan,⁴ which replaces counterfactuals with dispositions. (Their account was designed to deal with cases where the truth-tracking account undergenerates. Here, it *overgenerates*.)

Furthermore, they are unaffected by a recent defence of the truth-tracking account, due to Fred Adams and Murray Clarke,⁵ against already-known putative counterexamples; these ones seem importantly different, and nothing Adams and Clarke say carries over to them, at least in any way I have been able to discern.

Note also that there is no objection to these counterexamples to be had in protesting that beliefs based on delusions cannot be knowledge, or that unreliable methods cannot lead to knowledge – to insist on such things for putative cases of knowledge is simply to depart from the type of account under discussion.

The two counterexamples are quite different from each other. I put both forward because each seems interesting in its own way, and because two counterexamples to a false theory are better than one. (I find both convincing, but perhaps some readers will accept one and not the other.)

If I were more of an optimist I would conclude by saying that perhaps now we can finally relieve this tired old theory from being a contender, and instead learn from it a useful negative lesson about knowledge.⁶

⁴ Rachael Briggs and Daniel Nolan, “Mad, Bad and Dangerous to Know,” *Analysis* 72, 2 (2012): 314–316.

⁵ Fred Adams and Murray Clarke, “Resurrecting the Tracking Theories,” *Australasian Journal of Philosophy* 83, 2 (2005): 207–221.

⁶ Thanks to John Turri, Fred Adams and Murray Clarke for helpful correspondence.

CATEGORICITY, OPEN-ENDED SCHEMAS AND PEANO ARITHMETIC

Adrian LUDUŞAN

ABSTRACT: One of the philosophical uses of Dedekind's categoricity theorem for Peano Arithmetic is to provide support for semantic realism. To this end, the logical framework in which the proof of the theorem is conducted becomes highly significant. I examine different proposals regarding these logical frameworks and focus on the philosophical benefits of adopting open-ended schemas in contrast to second order logic as the logical medium of the proof. I investigate Pederson and Rossberg's critique of the ontological advantages of open-ended arithmetic when it comes to establishing the categoricity of Peano Arithmetic and show that the critique is highly problematic. I argue that Pederson and Rossberg's ontological criterion deliver the bizarre result that certain first order subsystems of Peano Arithmetic have a second order ontology. As a consequence, the application of the ontological criterion proposed by Pederson and Rossberg assigns a certain type of ontology to a theory, and a different, richer, ontology to one of its sub-theories.

KEYWORDS: Dedekind's categoricity theorem, categoricity arguments, semantic completeness, semantic realism, open-ended schemas, second order logic, Peano Arithmetic, Quine's ontological criterion

Categoricity vs. Completeness

Let's begin by defining the two concepts that I will investigate in this section. With respect to this goal we presuppose that a formal language \mathcal{L} , a recursive formal system $S = \{\mathbf{A}, \mathbf{F}, \mathbf{Ax}, \mathbf{R}\}$ ¹ with a semantic provided in the standard way have been specified. In this framework, crucial logical notions can be defined mathematically: what is a deduction of a sentence φ from a set Γ of sentences ($\Gamma \vdash \varphi$), what it means for a structure M to be a model of a sentence φ ($M \models \varphi$) - in which case we say that φ is true in M - or of a set Γ of sentences ($M \models \Gamma$), and what it means for a sentence φ to be the semantic consequence of a set Γ of sentences ($\Gamma \models \varphi$).

Definition 1. A theory T is categorical if any two models M_i and M_j of T are isomorphic, $M_i \cong M_j$.

¹ \mathbf{A} is the alphabet of \mathcal{L} , \mathbf{F} is the set of the formulae expressed in \mathcal{L} , \mathbf{Ax} is the set of certain formulae taken as axioms and \mathbf{R} is the set of rules of derivation.

Definition 2. A recursive formal system S (with a rigorously defined deduction relation \vdash) is complete (with respect to the consequence relation \vDash) if for all sets of sentences Γ and sentences φ , if $\Gamma \vDash \varphi$, then $\Gamma \vdash \varphi$.

There is a tension between the two notions visible in the case of second order Peano Arithmetic, PA2: PA2 is categorical, which makes its consequence relation \vDash_2 incomplete, as opposed to first order Peano Arithmetic, PA, which isn't categorical, but the first order consequence relation \vDash is complete. The argument for the former is straightforward: PA2's (intended) model is \mathbb{N} , so from the fact that PA2 is categorical, it follows that all models of PA2 are isomorphic to \mathbb{N} . Let φ be any sentence which is true in \mathbb{N} ; the categoricity of PA2 assures that $\text{PA2} \vDash_2 \varphi$, i.e. all models of PA2 are models of φ . Since φ is an arbitrary true sentence of \mathbb{N} , it can be the canonical Gödel sentence G_2 (or Rosser sentence R_2). By Gödel's incompleteness theorem, $\text{PA2} \not\vdash G_2$, (or if one prefers working with the Rosser sentence, $\text{PA2} \not\vdash R_2$) although, as argued, $\text{PA2} \vDash_2 G_2$, (or $\text{PA2} \vDash_2 R_2$) so the consequence relation \vDash_2 is not complete in the sense of *definition 2*.

For reasons that we are not going to expose and investigate here, completeness became the philosophically dominant notion among the two so much that the contributions of early authors who actively participated in the development of modern logic and mathematics were interpreted through this conceptual bias. The predominance of completeness over categoricity combined with a poor knowledge of Frege's work led to a crude misinterpretation of his philosophical project. Kneale, for example, in his 1956 paper, "Gottlob Frege and Mathematical Logic,"² interprets Frege's philosophical goal as providing a complete formal system capable to represent and characterize mathematical theories such as Peano Arithmetic or set theory. And by complete, Kneale understands what is conveyed by *definition 2*, as can easily be inferred from his conclusion that Frege's project was undermined by Gödel's incompleteness theorem.

Since Kneale's paper, categoricity gained momentum on at least two aspects. First, it was recuperated philosophically to the degree that debates regarding its significance not only are on-going, but occupy a crucial part of today's philosophy of mathematics, and the literature is growing. Second, intensive exegetical studies have thrown a new light on the status and relation of categoricity with other logical and mathematical notions in the works of Dedekind, Veblen, Fraenkel, Frege, Carnap, Tarski and Hilbert, to name a few.

² William Kneale, "Gottlob Frege and Mathematical Logic," *The Revolution in Philosophy* (London: Macmillan, 1956), 26–40.

Let us remark in passing that the philosophical ascendance of categoricity gained momentum with Georg Kreisel's 1972 article, "Informal Rigor and Completeness Proofs,"³ touching on the uses of categoricity for sustaining certain realist⁴ theses in the philosophy of mathematics. Since Kreisel's paper various categoricity arguments have been produced for sustaining substantial philosophical theses.

In what follows, I will focus on one such philosophical use of categoricity that gives thrust to semantic realism. In order to explain the mechanism by which categoricity provides support for semantic realism I will present and explain the relation between categoricity and semantic completeness.

Categoricity and Semantic Completeness

There are several equivalent definitions of semantic completeness. The following seems to be quite intuitive and common:

Definition 3: A theory T is semantically complete if either $T \models \varphi$ or $T \models \neg \varphi$, for all sentences φ .

This definition is equivalent to:

Definition 4: A theory T is semantically complete if for all T -models M_i, M_j and sentences φ , $M_i \models \varphi$ implies $M_j \models \varphi$.

Proposition 1: *Definition 3* is equivalent to *definition 4*.

Proof(sketch): 3 implies 4. Assume that either $T \models \varphi$ or $T \models \neg \varphi$, and suppose that $M_i \models \varphi$. Now, if it were the case that $M_j \models \neg \varphi$, then the theory T would have two models M_i, M_j such that $M_i \models \varphi$ and $M_j \models \neg \varphi$, which contradicts the assumption that either $T \models \varphi$ or $T \models \neg \varphi$, i.e. all models of T satisfies φ or all models of T satisfies $\neg \varphi$.

4 implies 3. Assume that for all T -models M_i, M_j and sentences φ , $M_i \models \varphi$ implies $M_j \models \varphi$. If it isn't the case that either $T \models \varphi$ or $T \models \neg \varphi$, then there are T - models M_1, M_2 such that $M_1 \models \varphi$ and $M_2 \models \neg \varphi$ which would contradict the assumption that for all T -models $M_i \models \varphi$ implies $M_j \models \varphi$.

³ Georg Kreisel, "Informal Rigor and Completeness Proofs," in *Problems in the Philosophy of Mathematics*, ed. Imre Lakatos (Amsterdam: North-Holland, 1972): 138–157.

⁴ For example the thesis that every mathematical sentence expressed in the language of a non-algebraic theory has a determinate truth value.

Steve Awodey and Erich Reck's article, "Completeness and Categoricity. Part I: Nineteenth-century Axiomatics to Twentieth-century Metalogic,"⁵ testifies, the early authors who developed formal axiomatic systems for significant areas of mathematics such as arithmetic, geometry and analysis 1) meant primarily by 'completeness' what we call categoricity, 2) considered that the philosophical significance of categoricity consists in proving the completeness of the axiomatization of a structure, regarding it as marker for the theory's successful axiomatization, and 3) took semantic completeness to follow immediately from categoricity, without feeling the need for a proof of this fact or analyzing the relations between completeness, categoricity, and semantic completeness.

Also, semantic completeness is repeatedly recognized to be a direct consequence of categoricity, although no proof of that fact is ever given; and sometimes the two notions are conflated, or apparently treated as equivalent. Finally, it is only around 1904-1906 that we have found the first expression of a suspicion, in some asides of Veblen's, that neither categoricity nor semantic completeness may need to coincide with deductive or logical completeness, or more generally that the deductive consequence relation may differ from its semantic counterpart.⁶

Now, for theories expressed in first order logic,⁷ but also in higher order logic,⁸ we can prove that categoricity implies semantic completeness. In order to sketch the proof in the first order case, we introduce a definition and state without proof a theorem (the isomorphism theorem):

Definition 3: Two models M_i and M_j are elementary equivalent, $M_i \equiv M_j$, if for all sentences φ , $M_i \models \varphi$ if and only if $M_j \models \varphi$.

Theorem 1 (the isomorphism theorem): If $M_i \cong M_j$, then $M_i \equiv M_j$.

Proof: by induction on the complexity of formulas and terms.

Proposition 2: If a first order theory T is categorical, then it is semantically complete.

Proof (sketch): Suppose a first order theory T is categorical. Assume that $M_i \models \varphi$, for some T -model M_i . Now, from the assumption that T is categorical it follows that $M_i \equiv M_j$, for all T -models M_j , which, from the *isomorphism*

⁵ Steve Awodey and Erich Reck, "Completeness and Categoricity. Part I: Nineteenth-Century Axiomatics to Twentieth-century Metalogic," *History and Philosophy of Logic* 23, 1 (2002): 1-30.

⁶ Awodey and Reck, "Completeness and Categoricity, Part I," 19.

⁷ Shortened as first order theories from now on.

⁸ For a (sketched) proof of the implication in higher order logic, see the proof of *Proposition 2* in Steve Awodey and Erich Reck, "Completeness and Categoricity, Part II: Twentieth-Century Metalogic to Twenty-first-Century Semantics," *History and Philosophy of Logic* 23, 2 (2002), 83.

theorem, further implies that $M_j \models \varphi$. By *definition 4* T is semantically complete.

An interesting problem is whether the converse of *proposition 2* holds. In the case of first order logic, the answer is negative; it is an easy consequence of the Löwenheim–Skolem theorems that no semantically complete first order theories with models that have infinite domains are categorical. The answer is negative too for theories with an infinite set of axioms formulated in higher order logic. However, Carnap⁹ conjectured that in the case of theories expressed in higher order logic with a finite set of axioms, semantic completeness implies categoricity. Although there are no known counter-examples to the implication from the semantic completeness to the categoricity in the case of such theories and several conditions¹⁰ which enable the implication have been discerned, Carnap’s conjecture remains unanswered.

In what follows I will discuss the use of categoricity as an argument for semantic realism, examine different proposals regarding the logical frameworks in which to prove the categoricity theorem for Peano Arithmetic, focusing on the open-ended arithmetic, investigate a critique of the ontological benefits of adopting open-ended arithmetic and show that the critique is highly problematic.¹¹

Categoricity and Semantic Realism

The core of semantic realism consists in the belief that the sentences (expressed in the languages) of certain mathematical theories have objective, and determinate truth values. I will call this belief the truth value determinacy thesis (TVD). The use of the categoricity of a theory T as an argument for the determinacy of the truth values of all the sentences φ expressed in the language of T has been vigorously championed by Vann McGee.¹² Let us develop his argument a little bit. A commitment to a literal reading of mathematical sentences, consistent with a realist approach of mathematics, seems to be at odds with an irreparable form of reference inscrutability for singular terms. Without diving too much into history, we can trace the argument for the referential inscrutability of mathematical

⁹ For details see Steve Awodey and A. W. Carus, “Carnap, Completeness, and Categoricity: The Gabelbarkeitssatz of 1928,” *Erkenntnis* 54, 2 (2001): 145–172.

¹⁰ Such conditions include the definability of the model, or that the model of such a theory has no proper submodels etc.

¹¹ Which doesn’t mean that the author is committed to the position that it is critiqued.

¹² Vann McGee, “How We Learn Mathematical Language,” *Philosophical Review* 106 (1997): 35–68.

singular terms to the seminal paper of Paul Benacerraf, “What Numbers Could Not Be.”¹³ Benacerraf begins by noting that in a set-theoretical framework one can construct the natural numbers system in two equivalent but incompatible ways. The popular, if not the standard construction among set theorists, involves representing 0 as \emptyset , and defining the successor function s_N as $s_N(x) = x \cup \{x\}$. Proceeding in this manner we obtain the following equalities: $0 = \emptyset$, $1 = \{0\} = \{\emptyset\}$, $2 = \{0, 1\} = \{\emptyset, \{\emptyset\}\}$, $3 = \{0, 1, 2\} = \{\emptyset, \{\emptyset\}, \{\emptyset, \{\emptyset\}\}$ and so on. As can be easily seen, in this construction each natural number n is identified with the set of all its predecessors, and, as a perk, the set corresponding to each number n contains n elements.¹⁴ Next, we define N_N to be the smallest set containing 0 and closed under the successor function s_N . It can be routinely verified that the structure $\langle N_N, 0, s_N \rangle$, thus specified, is a model of a Peano system. The recipe for this particular construction was proposed by von Neumann, and the sets identified as natural numbers are called von Neumann ordinals.

An alternative set-theoretic construction of the natural numbers was proposed by Ernest Zermelo; it begins with the same representation of the number 0 as \emptyset , but defines the successor function $s_Z(x) = \{x\}$; so, in the zermelian construction, $1 = \{\emptyset\}$ (which is identical with its counterpart in von Neumann construction), $2 = \{\{\emptyset\}\}$, $3 = \{\{\{\emptyset\}\}\}$ and so on. As in the case above, we define N_Z to be the smallest set containing 0 and closed under the successor function s_Z and leave to readers to convince themselves that the structure $\langle N_Z, 0, s_Z \rangle$, thus specified, is a model of a Peano system.

Now, the two structures are elementary equivalent although referentially different: the set corresponding to 2 in N_N is different from the set corresponding to 2 in N_Z ; moreover, there are true statements which hold in one but not the other: for example, $3 \in 4$ is true in $\langle N_N, 0, s_N \rangle$, but not in $\langle N_Z, 0, s_Z \rangle$. Benacerraf’s puzzle, as it is called, may be stated simply as “Which is the right identification of numbers?” Before continuing let’s address two caveats: the question regarding the identification of the natural numbers is not meant to disqualify other possible set-theoretical candidates, nor to suggest that before the emergence of set theory mathematicians failed to refer to numbers. Benacerraf’s puzzle, at least as I read it, concerns the referential status of natural numbers as constructed from set-theory, or, of any theory which have foundational virtues, taking the ontology of set-

¹³ Paul Benacerraf, “What Numbers Could Not Be,” in *Philosophy of Mathematics*, eds. Paul Benacerraf and Hilary Putnam (Cambridge: Cambridge University Press, 1993): 272–295.

¹⁴ Of course, this observation involves a circularity, but the goal of this presentation is not to rigorously define and construct the natural number sequence, which can be found in any introductory textbook on set theory, only to make intuitive the construction.

theory, or of any particular foundational theory, as the ontology of all mathematics.

To what sets do we refer when we speak, in set theoretic terms, about natural numbers: to finite von Neumann ordinals, or to Zermelo cardinals? As mentioned above, there are no mathematical reasons to distinguish between the two constructions, and to propose conventionally adopting one as a solution is hilarious.

McGee takes this referential indeterminacy to be unsolvable, but benign. He argues 1) that mathematical reference is scrutable only up to isomorphism and 2) that the important goal of a mathematical theory is to secure the determinacy of the truth values of its sentences, which can be achieved if the theory is categorical. And in this respect, McGee argues, we can have determinacy of truth value without referential determinacy.

The difficulty Benacerraf pointed to is a special case of a more general phenomenon of inscrutability of reference. [...] For the objects of pure mathematics, there are no contingencies and no causal connections; so the inscrutability strikes us full force. Inscrutability of reference arises from the fact that our thoughts and practices in using mathematical vocabulary are unable to discern a preference among isomorphic copies of a mathematical structure.¹⁵

Now, how do we get from categoricity to truth value determinacy? The general template of the argument runs through the following lines: if T is a categorical theory, then, by *proposition 2*, T is semantically complete, thus, by the definition of semantic completeness, we get that either $T \models \varphi$ or $T \models \neg \varphi$, for all sentences φ expressed in T 's language, which means, when unpacked, that either φ is true in all models M of T or its negation $\neg\varphi$ is true in all models M of T , which can be taken as an adequate operationalization of the truth value determinacy thesis.

Beyond First Order Logic

Let's resume the discussion from the last section. Semantic completeness is an easy consequence of categoricity, and is tight with the truth value determinacy thesis which constitutes the backbone of semantic realism. The moral is that the categoricity of a theory T , or its semantic completeness, can be used as an argument in favor of semantic realism, precisely, to argue for the thesis that each mathematical sentence couched in the language of T has a determinate truth value. So, in order to endorse semantic realism, one should focus its attention to

¹⁵ McGee, "How We Learn," 38.

those logical frameworks in which the categoricity of a theory or its semantic completeness can be conducted. I will argue that this means moving beyond first order logic. As it is well known, the defining properties of first order logic makes it an unsuitable candidate for proving the categoricity of theories, at least for theories which have a model with an infinite domain. Model theoretic results characterizing first order logic tell us that categoricity in first order logic can only be obtained for theories with finite models. Suppose that a first order theory T expressed in a language with cardinality λ , $\lambda \geq \aleph_0$, has an infinite model of cardinality κ , $\kappa > \lambda$. The upward Löwenheim–Skolem theorem tells us that T has models of every cardinality κ' , $\kappa' \geq \kappa$ while the downward Löwenheim–Skolem theorem tells us that T has a model of cardinality λ . Consequently, the two theorems indicate that such a first order theory T can't be categorical.

If first order theories that have infinite models are not categorical, maybe we should focus on the semantic completeness of such theories, which can deliver the same result, namely, semantic realism. Unfortunately, things don't look any better on this approach either. Although there are several semantically complete (but not categorical, as we just saw) first order theories such as the theory of discrete linear order with a first and no last point, Presburger Arithmetic¹⁶ (P), or elementary geometry¹⁷, Gödel's incompleteness theorem assures us that first order Peano Arithmetic can't be among these theories. To be precise, by Gödel's incompleteness theorem there is a sentence G expressed in PA's language such that $PA \not\vdash G$ (if P is consistent) and $PA \not\vdash \neg G$, (if PA is ω -consistent); accordingly, $PA \cup \{G\}$ and $PA \cup \{\neg G\}$ are consistent, so by the model existence lemma they each have a model, let's say M_1 and M_2 , which, *a fortiori*, are models of PA. In conclusion, PA isn't categorical nor semantically complete, which means that we don't have reasons to believe that PA has a unique model modulo isomorphism nor that the sentences expressed in PA's language have determinate truth values. Now, if there is a mathematical theory for which we have strong intuitions that it has a unique model up to isomorphism and that its sentences are determinately true or determinately false, that is Peano Arithmetic. So sticking with first order logic doesn't look like viable solution. Before continuing, a caveat should be addressed here: of course, we can resort to certain frame first order theories such

¹⁶ I will present and discuss Presburger Arithmetic later in the paper. For more details about the properties of Presburger Arithmetic see Herbert Enderton, *A Mathematical Introduction to Logic*, second edition (Boston, MA: Academic Press, 2001).

¹⁷ Tarski proved that elementary geometry formulated in first order logic is semantically complete and decidable, although not categorical. For more details see Alfred Tarski, Andrzej Mostowski, and Raphael Robinson, *Undecidable Theories* (Amsterdam: North-Holland, 1953).

as ACA_0 or first order set theory in which we can prove the categoricity of PA, but the standard argument against it is that this maneuver will push the problem from the categoricity of PA to that of the frame first order theories. Being formulated in first order logic, these too will have non-isomorphic models, non-standard models, and the categoricity of PA proved in these settings only ensures the uniqueness of the referential structure of PA within each model of the frame theory, not across models. In distinction, in second order logic, it is argued, we have categorical characterizations not only of Peano Arithmetic but of endless mathematical structures. Let us note, in passing, that Väänänen¹⁸ argued that this distinction between first order set theory and second order logic is illusory. However, I will not engage in this issue here, as my goal is to assess a critique addressed to the full open-ended arithmetic as a medium for conducting categoricity proofs.

Second Order Logic vs Open-Ended Schemas

By contrast with first order logic, in full second order logic one can categorically characterize Peano Arithmetic without the shortcomings inherent to first order settings mentioned and discussed above. But, as often, there is a price to be paid. In this case, the price regards the epistemological and ontological status of full second order logic and the epistemological significance of a categoricity proof conducted in such a system.

Epistemologically, there are a number of concerns regarding, on the one hand, the presuppositions implied by adopting second order logic as the framework in which to conduct the proof of the categoricity of Peano Arithmetic, and, on the other hand, the significance of a categoricity proof given those presuppositions. Full second order logic presupposes that the range of the second order quantifiers is constituted by the power set of the domain of the first order quantifiers. In our case, the range of second order quantifiers is $\mathcal{P}(\mathbb{N})$. Now, this can be unsettling for three reasons. First, it presupposes that we have an infinitary conception of sets of numbers, precisely, of arbitrary infinite sets of numbers whose membership relation we can't specify. Second, as argued by Toby Meadows,¹⁹ an approach to categoricity *via* full second order logic presupposes a powerful philosophical thesis, *the superstructure thesis*,²⁰ that each structure has a unique superstructure, where the superstructure is formed by taking the set of all

¹⁸ Jouko Väänänen, "Second Order Logic, Set Theory and Foundations of Mathematics," *The Bulletin of Symbolic Logic* 7, 4 (2001): 504–520.

¹⁹ For more details, see Toby Meadows, "What Can a Categoricity Theorem Tell Us?" *The Review of Symbolic Logic* 6 (2013): 524–543.

²⁰ Meadows, "What Can a Categoricity," 534–535.

collections of the domain and expanding the model accordingly. Thirdly, there are all the concerns regarding the determinacy and intelligibility of the powerset operation which I will not explore here. All these presuppositions make the epistemological significance of categoricity diminish. The belief in the superstructure thesis, for example, is philosophically stronger than that of the uniqueness of Peano Arithmetic modulo isomorphism, so nothing significant has been achieved in this case by providing a categoricity proof. Regarding the first presupposition it can be objected that the belief in the uniqueness of Peano Arithmetic does not commit one to an infinitary conception of arbitrary sets.

On the ontological side, an adherent of second order logic seems to be committed to the existence of something more than merely the elements of the first order domain, namely, to arbitrary sets of such elements, because the range of the second order quantifiers is constituted by the powerset of the first order domain. In particular, one who adopts PA2, is committed not only to the existence of numbers, but of arbitrary sets of numbers, in virtue of the semantics of the second order quantifiers. Now, these ontological commitments have been called “unsavory” by McGee²¹ “because they concern entities that are not properly speaking part of the subject-matter of the target theory – thus entities which an axiomatization of the theory should not commit one to.”²²

This way of determining the ontology of a theory is tributary to Quine’s slogan that “to be is to be the value of a bound variable.”²³ Of course, this ontological criterion is not the only offer on the market, nor is it unanimously embraced, but in what follows I will focus on some arguments that rely on this criterion.

In view of all these difficulties raised by the full second order logic, some authors²⁴ proposed an alternative in which to conduct categoricity proofs, an alternative suspended²⁵ between first and second order logic: the idea is to remain

²¹ McGee, “How We Learn,” 38.

²² Nikolaj Jang Lee Linding Pedersen, and Marcus Rossberg, “Open-Endedness, Schemas and Ontological Commitment,” *Nous* 44 (2010): 331.

²³ Willard van Orman Quine, “On What There Is,” in his *From a Logical Point of View*, second, revised edition (New York and Evanston: Harper Torchbooks, 1963), 15.

²⁴ I refer here to McGee, “How We Learn,” Charles Parsons, “The Uniqueness of the Natural Numbers,” *Iyyun* 39 (1990): 13–44, Charles Parsons, *Mathematical Thought and its Objects* (Cambridge: Cambridge University Press, 2008), and Shaughan Lavine, *Skolem Was Wrong* (Manuscript, 1999).

²⁵ To make more suggestive this in-between status of open ended schemas, I’ll index all such occurrences with $\frac{1}{2}$, 1 being the index of formulas or sentences for first order logic and 2 for second order logic.

formally within the bounds of first order logic, but to consider axiom schemas of theories as being open-ended, meaning to consider that axiom schemas remain valid under arbitrary extensions of a theory's language.

Let's restrict our attention to Peano Arithmetic, and formulate more carefully the idea behind open ended schemas in this particular case. The first order Peano Arithmetic, PA, has an induction schema:

$$(Ind_1) (\varphi(0) \wedge \forall x(\varphi(x) \rightarrow \varphi(s(x)))) \rightarrow \forall x\varphi(x), \text{ for all } \varphi(x) \in \mathcal{L}_{PA}.$$

which is not a part of \mathcal{L}_{PA} , but every instance gotten by substituting any open sentence of \mathcal{L}_{PA} for $\varphi(x)$ is. Now, Kreisel²⁶ pointed out that our belief in Ind_1 , that is, in the validity of the outcome produced by substituting open sentences of \mathcal{L}_{PA} for $\varphi(x)$, derives from our acceptance of the second order induction axiom:

$$(Ind_2) \forall X(X0 \wedge \forall x(Xx \rightarrow Xs(x)) \rightarrow \forall xXx), \text{ for all } X \subseteq \wp(\mathbb{N}).$$

But, as remarked above, the philosophical price for adopting second order logic is quite high, devoiding the results that can be obtained in second order logic of epistemological value or committing one to 'unsavory' ontological entities.

What McGee, Lavine and Parsons propose is to adopt the following open-ended schema of induction:²⁷

$$(Ind_{1/2}) (\varphi(0) \wedge \forall x(\varphi(x) \rightarrow \varphi(s(x)))) \rightarrow \forall x\varphi(x), \text{ for all } \varphi(x) \in \mathcal{L} \text{ and all } \mathcal{L} \supseteq \mathcal{L}_{PA}.$$

Various reasons have been advanced in order to support this alternative. Just to give an example, McGee²⁸ argues that in a rational reconstruction of how we learn mathematical theories, an essential step is precisely mastering the functioning of open ended schemas, so, in learning arithmetic, we basically learn $(Ind_{1/2})$. I will not present and examine all these arguments here, but focus on one reason that McGee stresses: that resorting to open ended schemas, among other philosophical benefits, purges the unsavory ontological commitments of second order logic retaining its strengths. Now, let's see how this maneuver retains the relevant properties of full second order logic that allow us to establish the categoricity of Peano Arithmetic.

In order to show this we have to clarify what extensions of \mathcal{L}_{PA} are admissible. Briefly, the legitimate extensions of \mathcal{L}_{PA} are those that are formed by

²⁶ Kreisel, "Informal Rigor."

²⁷ Remember that the only significant change between PA and PA2 is the induction axiom and the semantics that accompanies it.

²⁸ McGee, "How We Learn."

the introduction of a name or a constant denoting any individual from the domain, or by the introduction of predicates such that for any collection C of individuals from the domain, there is a predicate that is true of C , or it is involved in the construction of an open sentence satisfied by exactly the members of C . A passage from McGee's article "How We Learn Mathematical languages" is particularly illuminating in this respect:

To say what individuals and classes of individuals the rules of our language permit us to name is easy: we are permitted to name anything at all. For any collection of individuals K there is a logically possible world - though perhaps not a theologically possible world - in which our practices in using English are just what they are in the actual world and in which K is the extension of the open sentence 'x is blessed by God.' So the rules of our language permit the language to contain an open sentence whose extension is K . Moreover, the rules ensure that a true sentence would be obtained if such an open sentence were substituted into the Induction Axiom Schema, so they ensure that, if K contains any natural numbers at all, it contains a least natural number. This holds for any collection K whatever, whether or not we are psychologically capable of distinguishing the K 's from the non- K 's.²⁹

Following Pedersen and Rossberg I will operationalize the above remarks in what they call *McGee's rule*:

Consider a theory T formulated in a language L with at least one open-ended schema.

Then:

- (1) Any individual is nameable. If, for a given individual, L does not already contain a name for it, such a name can be added to L .
- (2) Any collection of individuals C is nameable, in the sense that, if L does not already contain an open sentence φ which holds exactly of the members of C , predicates (or other expressions) can be added to L that allow formulating a sentence that holds exactly of the members of C .³⁰

This rule coupled with $(\text{Ind}_{1/2})$ is logically as powerful as (Ind_2) in the setting of full second order logic. Any set S that is in the range of the second order quantifiers can be named in an extension of \mathcal{L}_{PA} by an open sentence, and substituted for $\varphi(x)$ in $(\text{Ind}_{1/2})$ in order to obtain a first order instance. This equivalence between the semantic values of second order quantifiers and the semantic values of predicates or open sentences in arbitrary extensions of \mathcal{L}_{PA} is

²⁹ McGee, "How We Learn," 59.

³⁰ Pedersen and Rossberg, "Open-Endedness," 333.

sufficient to ensure the provability of the categoricity of Peano Arithmetic. Just consider the second order formula:

$$\sigma(x): \forall X((\exists 0 \wedge \forall y(Xy \rightarrow Xs(y))) \rightarrow Xx)$$

Intuitively, this formula expresses the property of having all the hereditary properties of 0. By the comprehension schema of full second order logic there is a set which is the extension of this formula, so such a set is in the range of the second order quantifier. Applying (Ind₂) to the formula $\sigma(x)$ we get $(\sigma(0) \wedge \forall y(\sigma(y) \rightarrow \sigma(s(y)))) \rightarrow \forall x\sigma(x)$; proving the antecedent, which is fairly straightforward, yields PA2 $\vdash \forall x\sigma(x)$, from which, assuming soundness, we can infer PA2 $\models \forall x\sigma(x)$, that basically says that in every model of PA2 every element in the domain is 0 or one of its (finitely) successors. With this result established, categoricity falls shortly, all that remains to be proved is that any two such models of PA2 are isomorphic, which can be easily established.

Now, the equivalence between the semantic values of second order quantifiers and the semantic values of predicates or open sentences in arbitrary extensions of \mathcal{L}_{PA} assures us that there is an open formula $\sigma'(x)$ or a predicate letter with precisely the same extension as $\sigma(x)$, which, of course, is subject to (Ind_{1/2}). The above argument can now be reproduced and, thus, the categoricity of open-ended arithmetic established. This is the basic argument that open-ended arithmetic is categorical.

Open-Ended Schemas and Ontological Commitment

McGee argues that one of the advantages of adopting open-ended arithmetic is represented by its ontological parsimony. Let's sketch McGee's argument for this. We have mentioned that the active criterion employed in characterizing the ontology of a theory based on the range of its quantifiers is that proposed and advocated by Quine, that to be is to be the value of a bound variable. On a literal reading of this slogan, the open-ended arithmetic seems to be, ontologically, on a par with first order logic, for its quantifiers are first order. Every instance of (Ind_{1/2}) is first order, so open-ended arithmetic is committed to the existence of numbers, as revealed by the presence of its first order quantifiers, and is not committed to the existence of sets of numbers as revealed by the absence of second order quantifiers. This, in a nutshell is the gist of McGee's argument that open-ended schema arithmetic is "metaphysically benign."³¹

³¹ McGee, "How We Learn," 60.

Let us note that although open-ended arithmetic is ontologically as innocent as first order logic, in terms of characterizing the structure of the natural numbers is as powerful as second order logic.

Now, this package consisting of open-ended schemas coupled with McGee's rule may be seen as a cheat not only in establishing categoricity but also as a maneuver of avoiding the unsavory ontological commitments of second order logic. And, indeed, it was criticized on both accounts. Hartry Field³² criticized this approach in delivering categoricity results, insisting that it is at best question begging and has nothing to do with open-ended schemas and everything to do with the admissibility of new predicates with already determined extensions. Pedersen and Rossberg criticized it as a cheat for it presupposes a narrow reading of Quine's ontological criterion. In what follows I will concentrate on this second critique.

What Pedersen and Rossberg rightly observed is that the second order universal quantifier present in (Ind₂) gained one level, so to speak, thus appearing in (Ind_{1/2}) as the qualification that we have to take into consideration *all* (possible) extensions \mathcal{L} of \mathcal{L}_{PA} , more precisely (focusing on McGee's rule), that we can introduce predicates or open sentences and constants for *all* individuals and collections of individuals that constitutes the first order domain. So, the second order quantifiers disappears from the object theory, thus relieving it from the unsavory ontological burden, and emerges with basically the same function in the meta-theory, this time, seemingly, with no ontological effects at all. It is this observation that motivates Pedersen and Rossberg in amending Quine's criterion in order to account for this type of maneuvers.

What they propose is not a renunciation to the ontological criterion of Quine, but a modification of it so that, for some particular contexts, the first level ontological commitments of a theory, represented by the range of the theory's quantifiers, have to be coupled with the second level ontological commitments implied in the meta-theoretical principles that construe the theory. Well, the big question is to specify the cases in which we have to combine the two levels of ontological commitments. Although the authors admit that this is a "delicate and difficult issue"³³ they present a landmark that signals when the modified criterion has to be deployed: the modified criterion becomes active in all the cases where the meta-theoretical principles are indispensable for construing the theory in a

³² Hartry Field, "Postscript," in his *Truth and the Absence of Fact* (New York, Oxford University Press, 2001).

³³ Pedersen and Rossberg, "Open-Endedness," 333.

certain way, in order to achieve a goal. Let's synthesize their proposal in the following manner:

Pedersen & Rossberg's ontological criterion (PROC): The ontological commitments of a theory T consists of the values of the bound variables of T together with the values of the bound variables of the metal-theoretical principles used for construing T in a certain specific way.

Armed with this modified criterion we can see that open-ended arithmetic fails to be as ontologically parsimonious as first order arithmetic is; in fact, applying Pedersen & Rossberg's criterion equates the ontological commitments of open-ended arithmetic with those of second order arithmetic. The reason should be clear: as we have seen, McGee's meta-theoretical rule is indispensable in order to construe Peano Arithmetic as categorical and, thus, establishing the thesis of truth-value determinacy. As Hartry Field remarked,³⁴ McGee's rule is where the magic of the open-ended arithmetic lies, not $(\text{Ind}_{1/2})$, and, as shown in the previous section, the rule is needed in order to prove the categoricity which, further, is used for establishing the truth-value determinacy of arithmetical statements.

So, if the rule is used for construing the theory in this particular way (categoricity plus truth-value determinacy), then the bounded variables specified in the rule contribute to the theory's ontology, thus leading to the nasty repercussion for the aficionados of open-ended arithmetic that its ontology is equivalent to that of second order arithmetic (in virtue of the equivalence between the semantic values of the second order quantifiers and the semantic values of the predicates and open sentences of all the admissible extensions of \mathcal{L}_{PA}). This should be a fairly accurate gloss of Pederson and Rossberg:

Applying the modified criterion of ontological commitment, McGee's Rule is thus ontologically committing when open-ended arithmetic is thought of as a categorical theory with certain philosophical ramifications – which is exactly the way it is thought of when compared to second order arithmetic. Open-ended arithmetic – regarded in the manner indicated – is therefore not just committed to the numbers that serve as the values of the bound variables of the theory itself, but likewise to classes of these – indeed, to a class for any combination of numbers. Why? Because McGee's Rule involves a quantifier that ranges over arbitrary collections of the first-order domain: any collection of members of the first-order domain can be named.³⁵

³⁴ Field, "Postscript," 355-356.

³⁵ Pedersen and Rossberg, "Open-Endedness," 336.

Critiquing the Critique

In this section I will assess the critique of Pedersen and Rossberg regarding the ontological commitments of open-ended arithmetic, precisely, I will argue not only that their revised ontological criterion delivers counterintuitive results in certain widely accepted cases of first order theories, but that it assigns a certain type of ontology to a theory, and a different, richer, ontology to one of its sub-theories, making their proposal highly problematic. This doesn't mean that I endorse McGee's argument for the ontological parsimony of open-ended arithmetic over second order arithmetic, nor do I think that resorting to open-ended arithmetic is genuinely a valid maneuver for establishing categoricity.

Let's start by analyzing the modified ontological criterion (PROC). A first observation is that there seems to be an ambiguity in what the construal of the theory means. In our specific case, it seems that the construal of open-ended arithmetic means establishing categoricity and, as a philosophical consequence, the truth-value determinacy of its statements. But, McGee's rule, properly speaking, allows establishing the categoricity of arithmetic not the truth-value determinacy of its sentences, and it is debatable whether the latter follows from the former. So, in a sense, the construal forced by McGee's rule covers only categoricity, not truth-value determinacy. But let's concede that the proper construal of open-ended arithmetic involves the whole package, categoricity plus truth value determinacy. If this is the case, then my contention is that PROC is too philosophically sensible to be employed as a tool of discerning the ontology of a theory. Suppose that some authors deny that the categoricity of a theory has as a "philosophical corollary"³⁶ the truth value determinacy thesis. In fact, as Pedersen and Rossberg mention,³⁷ Hartry Field is one of them. For these authors, McGee's rule does not enforce the truth value determinacy thesis based on categoricity. Then, is it the case that for authors like Hartry Field open-ended arithmetic has a first order ontology? Somehow, in order to determine the ontology of a theory we are supposed to recognize and agree that the theory was construed in a certain manner, for example to be categorical and characterized by the determinacy of the truth values of its sentences. The problem, in our case study, is that the connection between the two constitutive items of the construal of open-ended arithmetic is not straightforward or transparent, leaving room for disagreement between the philosophical goal and the meta-theoretical property (categoricity, in this case) that supposedly delivers the goal. Surely, an easy answer would be to argue that

³⁶ Pedersen and Rossberg, "Open-Endedness," 336.

³⁷ Pedersen and Rossberg, "Open-Endedness," 337, note 2.

what matters is not how a person views the relation between the goal and the meta-theoretic property, but that the theory was construed in a specific manner in order to achieve a certain goal whether one agrees that it accomplish the intended goal or not. But this presupposes that establishing the ontology of a theory requires the ability to discern the indirect goals behind the formulation of certain meta-theoretical principles. So, prior to establishing the ontology of a theory we have to discern what goals motivate the particular formulation of certain principles. But this requirement faces two difficulties. First, the goals aren't necessarily grasped from the formulation of the principles, so that one who is not aware of the intention with which the meta-theoretic principles were formulated may attribute a different ontology than one who is. Secondly, one can find numerous compatible goals with the formulation in a certain manner of some meta-theoretical principles, thus expanding the ontology even of theories with widely recognized first-order type ontology.

Now, even if we grant, for the sake of argument, that the relation between the meta-theoretic property and the intended goal that it serves is not philosophically obscure, equivocal, or sensible, so that the connection is, to a functional degree, unproblematic, there is another objection that can be raised against PROC. The objection is that certain first order theories that have a first order ontology, by PROC's standards, have sub-theories with a second order ontology, according to the same ontological criterion, i.e. PROC. In the remainder of this paper I will develop such an example.

Presburger Arithmetic, P , is the sub-theory of PA from which we expelled the axioms governing the behavior of multiplication. Precisely, P is defined by the following axioms:

- (i) $\forall x \neg(0 = s(x))$
- (ii) $\forall x \forall y ((s(x) = s(y)) \rightarrow (x = y))$
- (iii) $\forall x (x + 0 = x)$
- (iv) $\forall x \forall y ((x + s(y)) = s(x + y))$

plus the axiom schema for induction:

- (v) $(\text{Ind}_P) (\varphi(0) \wedge \forall x (\varphi(x) \rightarrow \varphi(s(x)))) \rightarrow \forall x \varphi(x)$, for all $\varphi(x) \in \mathcal{L}_P$.

Let's mention, without giving a proof³⁸, a remarkable property of Presburger Arithmetic, namely, that it is semantically complete.

³⁸ The standard way of proving the semantic completeness of P is by using quantifier elimination.

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Now, focusing on the induction axiom (Ind_P), let's note that based on the way it is formulated, one can associated with it a meta-theoretic rule, call it *MTR*, that, as I will argue bellow, has an indispensable role in proving the semantic completeness of the theory from which the same old truth-value determinacy thesis follows.

MTR:

Consider a theory *T* formulated in a language *L* with at least one axiom schema.

Then:

Certain sets of numbers are nameable, precisely those sets whose members satisfy an open sentence of *T*. For every open sentence $\varphi(x)$ of *L* there is a set *S* such that $\varphi(x)$ holds exactly of the members of *S*.

We can see that, mirroring the formulation of McGee's rule, *MTR* just explicitly states what is involved in the appendix 'for all $\varphi(x) \in \mathcal{L}_P$ ', or, for that matter, in any appendices of first order axiom schemas.

As in the case of (Ind_{1/2}) and McGee's rule, the power of (Ind_P) lies in *MTR*. Without *MTR*, (Ind_P) has no real teeth, so, without *MTR*, (Ind_P) is useless, and *P* is reduced to the four axioms i) – iv) which constitutes a sub-theory of *P*, let's call it *O*. In other words, dropping *MTR* amounts to a renunciation of (Ind_P), thus leaving us with *O*. It can be proved, by a simple model-theoretic argument, that *O* is not semantically complete. In fact, one can build models of *O* in which intuitive true statements in the standard model of Peano Arithmetic, like $\forall x(0 + x = x)$, and $\forall x \neg (s(x) = x)$ are false. Take the statement $\forall x \neg (s(x) = x)$. In the standard model of Peano Arithmetic, this statement is true, so in the standard model of *O*, O^s this statement is also true, $O^s \models \forall x \neg (s(x) = x)$. Let's construct a model *O** of *O* by inserting into the standard model an element *a*, which is its self successor, i.e. $(s(a) = a)$ and define addition $+^*$ in the following manner:

$$m +^* n = \begin{cases} m + n, & \text{if } m, n, \text{ are standard} \\ m + a = a + m = a, & \text{if } m \text{ is standard} \end{cases}$$

As one can verify, in this model all the axioms of *O* are true, yet $\forall x \neg (s(x) = x)$ is false, as witnessed by *a*, so $O^* \models \neg (\forall x \neg (s(x) = x))$. As a consequence, *O* is not semantically complete. So, dropping *MTR* amounts to dropping (Ind_P) which, as we have seen, has the consequence that the remaining theory *O* defined by axioms i) – iv) minus (Ind_P) is not semantically complete.

The above argument shows that the *MTR* rule is essential in construing *P* as semantically complete, which means that *P* is subject to PROC, so one is right to claim that *P* is ontologically committed to the existence of certain sets of numbers, namely to those sets that are the semantic values of the open sentences of *P*. Technically, the quantifier present in *MTR* commits *P* to the existence of sets of numbers, so the ontology of *P* is second order. Thus, applying PROC to *P* gives us the odd result that Presburger Arithmetic has a mixed ontology, composed of numbers and sets of numbers, basically, a second order ontology, parsimonious to be fair, but, nevertheless, second order. Of course, this goes against the widely accepted first order ontology of this theory. More importantly, applying PROC to PA gives the result that PA has a first order ontology, yet, based on the same criterion, a sub-theory of PA, namely *P*, has a parsimonious second order ontology. I take the result that PA has a first order ontology, corroborated by the universal consensus,³⁹ to mean that *P*, as a sub-theory of PA, has to have a first order type of ontology. Yet, on this issue, PROC says something else, that *P* has a second order ontology. What credibility an ontological criterion has, if it assigns a certain type of ontology to a theory, and a different, richer, ontology to one of its sub-theories? The fact that PROC delivers such weird, if not inconsistent, results seems to me to be a sign that it simply does not work as an adequate and functional ontological criterion.

Let's address another possible objection that may be raised against the argument developed so far. Maybe PROC is applicable only for those theories lacking a meta-theoretic property such as categoricity or semantic completeness, and for which a meta-theoretic principle is summoned in order for the theory to acquire a certain meta-theoretic property. This objection can be counter by observing that a change in *MTR* affects the meta-theoretic properties of *P*: for example, if we restrict *MTR* to a certain specific set of open sentences $\varphi(x)$ of *L*, such as the Δ_0 set of formulas of \mathcal{L}_P , then *P* is no longer semantically complete. Consider the theory PA_{Δ_0} :

- (i) $\forall x \neg(0 = s(x))$
- (ii) $\forall x \forall y ((s(x) = s(y)) \rightarrow (x = y))$
- (iii) $\forall x ((x + 0) = x)$
- (iv) $\forall x \forall y ((x + s(y)) = s(x + y))$

and

³⁹ I don't know whether somebody has argued that PA's ontology goes beyond first order.

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(v) (Ind Δ_0): $(\varphi(0) \wedge \forall x(\varphi(x) \rightarrow \varphi(s(x))) \rightarrow \forall x\varphi(x))$, for all $\varphi(x) \in \Delta_0$ or for some suitable specified subset of formulas of \mathcal{L}_P .

Claim: $P\Delta_0$ is incomplete.

Argument: It is not hard to see that the sentence $U = \forall x(\neg(x = 0) \rightarrow \exists y(x = s(y)))$ is not derivable in $P\Delta_0$, and not difficult to construct models M_i and M_j such that $M_i \models U$ and $M_j \models \neg U$.

Now, in order to make $P\Delta_0$ semantically complete, we can lift the restriction of considering only Δ_0 open formulas as being amenable to induction and let the whole set of open formulas of \mathcal{L}_P be subjected to the rule of induction, thus adopting a full-fledged *MTR*. The resulting theory will be semantically complete, because of the adoption of this full-fledged *MTR*, so again PROC will be applicable to this particular example, delivering the same inconsistent results.

As I have mentioned, this critique of PROC is not meant to be an endorsement of McGee's philosophical position on open ended arithmetic, which, for reasons that I will not explore here, I think is highly problematic too. The whole point of this section was to argue that Pederson and Rossberg's proposal to modify Quine's ontological criterion, although justly motivated, leads to some counterintuitive and hard to accept results regarding the widely accepted ontology of some simple arithmetic theories.⁴⁰

⁴⁰ This paper is supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number POSDRU 159/1.5/S/133675.

EXPLANATIONISM: DEFENDED ON ALL SIDES

Kevin McCAIN

ABSTRACT: Explanationists about epistemic justification hold that justification depends upon explanatory considerations. After a bit of a lull, there has recently been a resurgence of defenses of such views. Despite the plausibility of these defenses, explanationism still faces challenges. Recently, T. Ryan Byerly and Kraig Martin have argued that explanationist views fail to provide either necessary or sufficient conditions for epistemic justification. I argue that Byerly and Martin are mistaken on both accounts.

KEYWORDS: evidentialism, explanationism, explanationist evidentialism, justification

Explanationists about epistemic justification hold that justification depends upon explanatory considerations. In fact, explanationists agree with Earl Conee and Richard Feldman's claim that "fundamental epistemic principles are principles of best explanation."¹ After a bit of a lull, there has recently been a resurgence of defenses of such views.² Despite the plausibility of some of these defenses, explanationist views still face challenges. Several authors have argued that explanationism fails to provide a necessary condition for justification. Keith Lehrer and Alvin Goldman have both argued that explanationism fails to account for our justification in cases of beliefs formed by simple deductive and arithmetical inferences.³ T. Ryan Byerly has argued that explanationism cannot account for the

¹ Earl Conee and Richard Feldman, "Evidence," in *Epistemology: New Essays*, ed. Quentin Smith (Oxford: Oxford University Press, 2008), 97.

² For example, Conee and Feldman, "Evidence," Kevin McCain, "Explanationist Evidentialism," *Episteme* 10 (2013): 299-315, Kevin McCain, *Evidentialism and Epistemic Justification* (New York: Routledge, 2014), Kevin McCain, "Evidentialism, Explanationism, and Beliefs about the Future," *Erkenntnis* 79 (2014): 99-109, and Ted Poston, *Reason & Explanation: A Defense of Explanatory Coherentism* (New York: Palgrave-MacMillan, 2014) have each recently defended versions of explanationism. Prior to these recent developments explanationism has not been close to center stage since the late 1980s when Gilbert Harman, *Change in View* (Cambridge, MA: MIT Press, 1986) (expanding on Gilbert Harman, *Thought*. (Princeton: Princeton University Press, 1973)), William Lycan, *Judgement and Justification* (Cambridge: Cambridge University Press, 1988), and Paul Moser, *Knowledge and Evidence* (Cambridge: Cambridge University Press, 1989) defended explanationist theories.

³ Keith Lehrer, *Knowledge* (Oxford: Oxford University Press, 1974) and Alvin Goldman, "Toward a Synthesis of Reliabilism and Evidentialism? Or: Evidentialism's Troubles,

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justification of a particular class of inductive beliefs – those pertaining to the future.⁴

I have attempted to respond to both of these difficulties with my *Explanationist Evidentialism*. In particular, Explanationist Evidentialism includes the following account of propositional justification:

Ex-EJ

A person, S, with evidence e at t is justified in believing p at t iff at t S has considered p and:

either (i) p is part of the best explanation available to S at t for why S has e, or

(ii) p is available to S as a logical consequence of the best explanation available to S at t for why S has e.⁵

In essence, I responded to the difficulties raised by Lehrer and Goldman by conceding the points that they make – that strict explanationism cannot account for the justification of these beliefs – and incorporating logical consequence into the account of propositional justification ((ii) in the above principle).⁶ I then made use of both explanation and logical consequence when responding to Byerly's objection.

Reliabilism's Rescue Package," in *Evidentialism and Its Discontents*, ed. Trent Dougherty (New York: Oxford University Press, 2011), 254-80.

⁴ T. Ryan Byerly, "Explanationism and Justified Beliefs about the Future," *Erkenntnis* 78 (2013): 229-43.

⁵ This is essentially the formulation that I defend in "Explanationist Evidentialism", *Evidentialism*, and "Beliefs about the Future." In "Beliefs about the Future" my defense of this sort of principle is somewhat tentative, but I explicitly endorse the principle, and formulate it more carefully, in "Explanationist Evidentialism" and *Evidentialism*. The primary difference between "Explanationist Evidentialism" and *Evidentialism* concerning this account of propositional justification is that in the earlier work, "Explanationist Evidentialism," I refer to this account as "Explanationist Evidentialism." However, in the later work Explanationist Evidentialism is put forward as a complete evidentialist account of justification – one that accounts for both propositional and doxastic justification. So, what I call "Explanationist Evidentialism" in the earlier work is essentially the component of Explanationist Evidentialism that I call "*Ex-EJ*" – the component that provides an account of propositional justification – in *Evidentialism*.

⁶ Of course, this is a concession *only if* relations of logical consequence are not themselves explanatory relations. See Gilbert Harman, *Thought*, for reasons to think that relations of logical consequence are in fact explanatory, and see Wesley Salmon, *Four Decades of Scientific Explanation* (Minneapolis: University of Minnesota Press, 1989) for reasons to deny this.

Recently, Byerly and Kraig Martin have moved the debate over the acceptability of explanationism forward in important ways.⁷ First, B&M argue that while *Ex-EJ* seems to succeed as a response to the objections of Lehrer and Goldman, it fails to adequately respond to Byerly's objection.⁸ So, they contend that *Ex-EJ*, and explanationism more generally, fails to give a necessary condition for justification. Second, in addition to critiquing my earlier responses to Byerly, B&M also present a new objection that is designed to show that explanationist views fail to provide a sufficient condition for justification. The upshot of B&M's discussion is that, as they say, "explanationist views face problems on both sides."⁹

Here I argue that explanationism has the resources to adequately respond to both of B&M's attacks. More specifically, in the section that immediately follows (section 1) I briefly discuss B&M's argument for why my *Ex-EJ* fails to adequately address Byerly's concern about beliefs about the future. I grant B&M that they *may* be correct on this point; however, I argue that there is a modification of my view that can yield the appropriate results when it comes to beliefs about the future. Importantly, the modification I propose is independently motivated by consideration of the explanationist insights that I was attempting to capture with *Ex-EJ*. Further, not only does this modification provide a satisfying response to Byerly's objection, it continues to yield convincing responses to the objections of Lehrer and Goldman concerning deductive and arithmetical inferences. Thus, this modification in response to B&M marks a significant improvement in the formulation of explanationism. In the final section (section 2) I explore B&M's argument for thinking that explanationism fails to provide a sufficient condition for justification. I argue that, while interesting, B&M's case against explanationism is mistaken, a fact that can be seen by recognizing a subtle point about the commitments of explanationist views.

1. The Challenge to the Necessity Condition of Explanationism

1.1 My Original Response to Byerly's Case

In order to understand B&M's argument for thinking that *Ex-EJ* fails to provide a necessary condition for justification it is important to first consider the case that underlies their argument. Here is the case of beliefs about the future that Byerly originally presents:

⁷ T. Ryan Byerly and Kraig Martin, "Problems for Explanationism on Both Sides," *Erkenntnis* 80 (2015): 773-91. Hereafter I will refer to Byerly and Martin in the text as "B&M."

⁸ Byerly, "Explanationism."

⁹ Byerly and Martin, "Problems for Explanationism," 790.

Suppose I'm on the golf course on a sunny, calm day. My putting stroke has been working for me most of the day, and I'm now on the sixteenth green. It's not a long putt – just six feet. I'm fairly confident. I rotate my shoulders, pulling the putter back, and then accelerate through the ball. It rolls toward the cup. The speed looks good. The line looks on. Yes, I believe it's going in!¹⁰

Byerly claims that it “is implausible” to think that <the golf ball will roll into the cup> is part of the best explanation of his evidence because “[s]urely the ball's rolling into the cup at some later time doesn't explain why right now I have the evidence that I do.”¹¹ According to Byerly, the explanation for the evidence he has at this point “is a body of current and perhaps past propositions” – “little, if any, future facts enter into the best explanation for my current experience.”¹² In light of this, Byerly argues that explanationist views face a serious problem because <the golf ball will roll into the cup> is justified for him, but it does not seem to be part of the best explanation of his evidence.

As B&M note, in my earlier works I offered three sorts of responses to Byerly's case, which they helpfully term the “*epistemic probability strategy*, the *normal case strategy*, and the *near neighborhood strategy*.”¹³ Importantly, each of these strategies grants that Byerly is correct that (i) of *Ex-EJ* is not satisfied in his case. However, I attempted to show that (ii) of *Ex-EJ* is satisfied in Byerly's case by describing how it could be so given each of the three strategies. Rather than discuss all three of these strategies, I will simply discuss the *epistemic probability strategy* and the problem that B&M expose for it. The reason I do this is threefold. First, the problem that B&M raise for the *epistemic probability strategy* is one that they argue is equally a problem for the *near neighborhood strategy*. Second, as noted earlier I think that B&M make a fairly good case for thinking that *Ex-EJ* may have problems here. So, although the problem they raise for the *normal case strategy* is different, and so this strategy may not be as problematic as they suggest, I am willing to grant for the sake of argument that B&M's objections to all three strategies are effective. Third, by considering the problem that B&M propose for the *epistemic probability strategy* the motivation for the sort of modification of *Ex-EJ* that I suggest becomes clearer.

As the name suggests, the *epistemic probability strategy* involves appealing to a particular view of epistemic probability. Namely, it utilizes the view of epistemic probability held by some philosophers where *p* is epistemically probable

¹⁰ Byerly, “Explanationism,” 235.

¹¹ Byerly, “Explanationism,” 235.

¹² Byerly, “Explanationism,” 236.

¹³ Byerly and Martin, “Problems for Explanationism,” 778.

for S just means that S's evidence on balance supports believing that p .¹⁴ Here is how I presented this response to Byerly's case (where "circumstances C" are the circumstances that Byerly is currently observing in his original case):

It is plausible that in this sort of case both <most golf balls rolling toward a cup in circumstances C go into the cup> and <the golf ball is rolling toward a cup in circumstances C> are part of the best available explanation of Byerly's evidence. It is not unreasonable to think that because of this the best available explanation of Byerly's evidence entails that the golf ball will probably (more likely than not) go into the cup. That is, it is reasonable to think that the best explanation of Byerly's evidence entails that it is epistemically probable that the golf ball will go into the cup ... the fact that Byerly's evidence entails <the golf ball will probably go into the cup> means that his evidence entails <Byerly's evidence on balance supports <the golf ball will go into the cup.>> Presumably, if S's evidence on balance supports believing that her evidence on balance supports believing that p , then her evidence on balance supports believing that p . Thus, if one understands epistemic probability to be the same as epistemic support, then it is plausible that in this case Byerly's evidence supports <the golf ball will go into the cup.>¹⁵

I assumed that the other conditions laid out in Explanationist Evidentialism are also satisfied in Byerly's case. Since I argued that (ii) of *Ex-EJ* is satisfied in this case, I claimed that my explanationist theory yields the intuitively correct result that Byerly is justified in believing that the <the golf ball will go into the cup.>

1.2 B&M's Attack on My Original Response

As noted above, B&M argue that all three strategies that I employed in responding to Byerly's case are problematic. For the present purpose, however, it will be sufficient to examine only their response to the *epistemic probability strategy*. The problem that B&M raise for this strategy is straightforward. As they point out, "generally, a conjunction of propositions of the form <Most Fs are Gs> and <x is an F> does not entail <probably x is a G.> This is because x might be a member of some other category, H, such that most members of H are not Gs."¹⁶ In order to illustrate this B&M offer the following:

Sally is a woman over 35. Suppose most women over 35 are unable to run a 6-min mile. Do these claims *entail* that it is probable that Sally is unable to run a 6-min mile? They do not ... suppose in addition to being a woman over 35, Sally is

¹⁴ See Roderick Chisholm, "The Status of Epistemic Principles," *Nous* 24 (1990): 209–15 and Earl Conee and Richard Feldman, "Evidentialism," *Philosophical Studies* 48 (1985): 15–34.

¹⁵ McCain, *Evidentialism*, 145.

¹⁶ Byerly and Martin, "Problems for Explanationism," 778.

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a world-class Olympic runner, and that almost all world-class Olympic runners are able to run 6-min miles. If anything, then, it is likely that she *can* run a 6-min mile.¹⁷

The problem here arises from the monotonicity of logical entailment – if p logically entails q , then $p \& r$ entail q as well. In light of this fact, B&M argue that the *epistemic probability strategy* fails. The problem, they claim, is that <the golf ball will probably go into the cup> is not entailed by the conjunction of <most golf balls rolling toward a cup in circumstances C go into the cup> and <the golf ball is rolling toward a cup in circumstances C.> So, B&M argue that the *epistemic probability strategy* fails to provide a satisfactory response to Byerly's case on behalf of *Ex-EJ*.

While there are ways that I could respond to this sort of objection without abandoning *Ex-EJ*, I think that B&M provide at least *prima facie* grounds for doubting that (ii) of *Ex-EJ* provides explanationists with a way of handling Byerly's golf case.

1.3 Upgrading Ex-EJ

B&M's argument provides grounds for thinking that *Ex-EJ* is in need of revision. Importantly, there are also independent grounds for thinking that *Ex-EJ* would be improved by the sort of revision that I will elucidate in this section. These independent grounds arise from the fact that *Ex-EJ* seems to sacrifice some of its explanationist essence in an attempt to respond to cases like Byerly's, Goldman's, and Lehrer's. Specifically, by adding an appeal to logical consequence *Ex-EJ* is more complex than it would be if it only appealed to explanatory relations. Explanationists accept that, all other things being equal, a simpler theory is better than a more complex one. So, if *Ex-EJ* could be made to work without building in an appeal to logical consequence it would be better because it would be simpler. Additionally, including something beyond explanatory considerations runs counter to the idea that the only fundamental epistemic principles are principles of best explanation. This understanding of epistemic principles is something that I, and other explanationists, go to some lengths to motivate. So, if the arguments of B&M were not enough (though they may be), there are additional reasons to think that *Ex-EJ* could use some revision.

Fortunately, *Ex-EJ* can be modified so that it provides a satisfactory response to Byerly's case, a response that does not fall prey to B&M's objections. What is more *Ex-EJ* can be so modified while retaining its fundamental

¹⁷ Byerly and Martin, "Problems for Explanationism," 778.

explanationist nature and still providing intuitively correct responses to Goldman and Lehrer's cases.

Here is a modified version of *Ex-EJ*:

Ex-EJ 2.0

A person, S, with evidence e at t is justified in believing p at t iff at t S has considered p and:

- either (i) p is part of the best explanation available to S at t for why S has e, or
- (ii) p is available to S as an explanatory consequence of the best explanation available to S at t for why S has e.

It is worth very briefly explicating a couple points about *Ex-EJ 2.0* before continuing. First, it should be noted that the first disjunct of the right-hand of *Ex-EJ 2.0* is identical to the first disjunct of the original *Ex-EJ*. Second, by saying that p is "an explanatory consequence of the best explanation available to S at t" I mean that p would be better explained by the best explanation of S's evidence available to S at t than $\sim p$ would. In other words, if p were true, the best available explanation of S's evidence would better explain its truth than it would the truth of $\sim p$, if $\sim p$ were true.^{18,19}

In the next section it will be made clear how this modified account provides the intuitively correct result in Byerly's case, and in the section after that how it provides the intuitively correct results in Goldman's and Lehrer's cases as well.

¹⁸ This approach is influenced by earlier explanationist views such as Harman, *Thought*, where p is justified when it explains or is explained by one's evidence. Notably, the approach here does not say that p is justified when it is explained by one's evidence though. Rather, *Ex-EJ 2.0* holds that p is justified when it best explains S's evidence or it would be explained by the best explanation of S's evidence. The difference between *Ex-EJ 2.0* and earlier explanationist views is subtle, but important.

¹⁹ There are important qualifications of *Ex-EJ 2.0* that bear noting. In order for S to be justified in believing that p it must not only be the best available explanation of S's evidence, it must also be a *sufficiently good* explanation of S's evidence. Similarly, in order for S to be justified in believing an explanatory consequence, p, of the best available explanation of her evidence it has to be that the best available explanation of her evidence would explain p *significantly better* than it would $\sim p$. Admittedly, it may be difficult to precisely spell out what is required for an explanation to be sufficiently good or for p to be explained significantly better than $\sim p$. However, for present purposes it is not necessary to make these qualifications of *Ex-EJ 2.0* precise. Instead, it can simply be assumed that these conditions are met in the discussion that follows.

1.4 Ex-EJ 2.0 and Byerly's Case

The case of beliefs about the future that Byerly presents is a special instance of inductive belief. So, I will first explain how *Ex-EJ 2.0* handles the justification of inductive beliefs. A simple case of justified inductive inference is one in which S has made many varied observations of Fs and they have all been G. Plausibly, in such a case part of the best explanation available to S for her observational evidence is that <all Fs are G.>²⁰ In such a case it is intuitive to think that S is justified in believing that the next observed F will be G (assuming, of course, that S has reason to think that there will be a next observed F). *Ex-EJ 2.0* yields this result. <The next observed F will be G> is better explained by the best explanation of S's evidence than <the next observed F will not be G.> After all, <all Fs are G> provides a very good explanation of the first proposition, but no explanation at all of the second.

A more complex case of inductive inference arises when S has made many varied observations of Fs and most, but not all, have been G. In such a case <all Fs are G> is not part of the best available explanation of S's evidence. Instead, something like <most Fs are G> (or perhaps something more particular like <n% of Fs are G,> where "n%" is greater than 50%) is part of the best available explanation of S's evidence. Often in such cases, at least those where n% is significantly higher than 50%, we still think that S would be justified in believing <the next observed F will be G>, just not as justified as she would be had all observed Fs been G.

Again, *Ex-EJ 2.0* yields the intuitive result. In a case where most observed Fs have been G, S is justified in believing <the next observed F will be G> because the best explanation of her evidence, which includes <most Fs are G>, better explains that proposition than its denial. The reason for this is that large probabilities explain better than smaller ones. That is to say, if we are considering two hypotheses and, for example, one says that the probability of A occurring is X and the other says that the probability of A occurring is <X, although both hypotheses might offer potential explanations of A's occurrence, all other things

²⁰ Whether this regularity is a natural law or some other perhaps contingent regularity does not matter for the present purpose. Further, it is worth mentioning that when we are explaining why all observed Fs are G, as Roger White, "Explanation as a Guide to Induction," *Philosopher's Imprint* 5 (2005), accessed September 29, 2014, www.philosophersimprint.org/005002/, says "the properties of unobserved things is crucial" because "if the unobserved Fs are G, then it is to be expected that we only observe Fs which are G."

being equal the first hypothesis is a better explanation of A.²¹ Likewise, if a particular hypothesis says that the probability of A occurring is X and the probability of B occurring is $<X$, then, all other things being equal, the hypothesis provides a better explanation of A than it does of B. When we say, “most Fs are G” we are saying that the probability of observing a F that is a G is X (in this case $X > .5$) and the probability of observing a F that is not a G is $<X$. So, $<\text{most Fs are G}>$ would better explain $<\text{the next observed F will be G}>$ than it would explain $<\text{the next observed F will not be G}>$ because it offers a higher probability explanation of the first proposition than it does for the second. Thus, *Ex-EJ 2.0* coupled with the widely accepted claim that large probabilities explain better than smaller ones yields the intuitive results in these sorts of cases of inductive inference.

It should now be fairly clear how *Ex-EJ 2.0* leads to the correct result in Byerly’s case. The fact that $<\text{the golf ball will roll into the cup}>$ is a proposition about the future poses no special challenge for *Ex-EJ 2.0*; Byerly’s case is simply a case in which most observed Fs have been G – most golf balls in this sort of situation have gone into the cup. So, in Byerly’s case it is reasonable to think that part of the best explanation of his evidence is $<\text{most golf balls in these circumstances roll into the cup}>$.²² As a result the best explanation of Byerly’s evidence would better explain the event of the golf ball that Byerly is currently observing going into the cup than it would the event of the golf ball not going into the cup because it offers a higher probability explanation of the former than of the latter event. Thus, *Ex-EJ 2.0* yields the result that $<\text{the golf ball will roll into the cup}>$ is justified for Byerly because the truth of this proposition would be better explained by the best available explanation of Byerly’s evidence than its denial would be.²³

²¹ For further articulation and defense of why large probabilities explain better than smaller ones see Michael Strevens, “Do Large Probabilities Explain Better?” *Philosophy of Science* 67 (2000): 366-90. Also, see Jonah Schupbach and Jan Sprenger, “The Logic of Explanatory Power,” *Philosophy of Science* 78 (2011): 105-27 for defense of an account of explanatory power on which higher probabilities offer greater explanatory power.

²² By “these circumstances” I simply mean the circumstances that Byerly is currently observing in his case.

²³ It should not be too surprising that explanationism can adequately respond to the sort of case that Byerly describes. After all, inference to the best explanation is commonly appealed to in the sciences to justify claims about unobservables as well as to justify the acceptance of statements of natural laws. Importantly, the natural laws that are justified by inference to the best explanation make claims about the past, present, and future behavior of the universe.

1.5 Ex-EJ 2.0 and Logical Entailment

Before concluding that *Ex-EJ* should be replaced with *Ex-EJ 2.0* it is important to establish that *Ex-EJ 2.0* can yield the appropriate results in the other sort of cases that prompted the inclusion of logical consequence in *Ex-EJ*. Although the cases presented by Keith Lehrer and Alvin Goldman are similar, it is worth briefly considering both. To begin, here is the case that Lehrer uses to challenge explanationism:

Imagine that I am standing with my toe next to a mouse that is three feet from a four-foot-high flagpole with an owl sitting on top. From this information concerning boundary conditions and the Pythagorean Theorem, which we here construe as an empirical law, we can deduce that the mouse is five feet from the owl.²⁴

According to Lehrer, this sort of case poses a serious threat to explanationism because while he is “completely justified in his belief that the mouse is five feet from the owl,” he “has no explanation of why the mouse is five feet from the owl.”²⁵ Lehrer insists that the justification of his belief about the distance from the mouse to the owl does not depend on “explanatory relations” at all. Instead, he maintains, “it is enough that the man knows the Pythagorean Theorem, the distance to the pole, and the height of the pole, and deduces the conclusion.”²⁶ So, Lehrer claims that explanationism cannot properly account for the justification of his belief in this case.

Initially, one might be inclined to agree with Lehrer about this case. After all, in this case Lehrer does not seem to have any explanation for why the mouse is where it is. He does not have much evidence about this particular mouse or its life history, nor does he have any evidence concerning why this mouse would take such a risk by coming so close to an owl. So, one might be tempted to conclude, as Lehrer would have us do, that in this case Lehrer has a justified belief concerning the distance from the mouse to the owl, but this belief is not justified because of explanatory considerations at all. Concluding this would be a mistake, however.

²⁴ Lehrer, *Knowledge*, 166. Lehrer also presents a similar case where he sees a dead man and deduces that the man was sexually conceived. I do not discuss this case here because it is not relevantly different from the case involving the Pythagorean Theorem.

²⁵ Lehrer, *Knowledge*, 178.

²⁶ Lehrer, *Knowledge*, 178. As noted above, Lehrer’s objection gets no traction at all, if entailment relations are explanatory relations. I will not take a stand on this issue because explanationists do not need to endorse the idea that entailment relations are explanatory in order to respond to Lehrer’s objection.

Notice that according to the first clause of *Ex-EJ 2.0*, (i), *p* is justified for *S* when it is part of the best explanation available to *S* for why she has the evidence that she does. What is the evidence in Lehrer's case? Presumably, it includes mental states that give him knowledge of various things: the height of the flagpole, the distance the mouse is from the flagpole, the Pythagorean Theorem, and the fact that the owl is on top of the flag pole. Lehrer's evidence also includes his awareness of the truth of <the mouse is five feet from the owl> seeming to follow from the truth of other items of his evidence. Surely, Lehrer has this sort of awareness since he deduces the truth of <the mouse is five feet from the owl> from his other evidence. Plausibly, part of the best explanation available to Lehrer for why it seems that <the mouse is five feet from the owl> follows from his evidence is that <the mouse is five feet from the owl> is in fact true. It is because of this that an explanationist can respond to Lehrer by pointing out that explanatory relations are relevant to his justification for this proposition after all. Lehrer assumes that for explanatory considerations to be relevant to his justification for believing <the mouse is five feet from the owl> he must have an explanation for what led to this mouse being where it is, but this assumption is mistaken. According to an explanationist account like *Ex-EJ 2.0*, the relevant explanatory relations are between a proposition and one's evidence. All that is required for justification is for <the mouse is five feet from the owl> to be part of the best explanation of Lehrer's evidence, which it is. Thus, <the mouse is five feet from the owl> does bear the appropriate explanatory relations to Lehrer's evidence, so there is no problem for *Ex-EJ 2.0*, or explanationist views in general, here.²⁷

Goldman's case seems to rely on a similar mistaken assumption. Here is his case:

I think there are two squirrels on my deck, and I think there are two birds. So I infer that there are (at least) four animals. Presumably, this arithmetic inference is justified. Is it a case of explanatory inference? Surely not. How does there being four animals *explain* there being two squirrels and two birds? It doesn't. Still, here is a justified belief that some epistemic principle must cover. But that principle, in turn, cannot be grounded in terms of best explanation.²⁸

Goldman claims two things are true about this case. First, it is clear that in this case that he has justification for thinking that there are (at least) four animals

²⁷ See Poston, *Reason & Explanation*, for different considerations for thinking that Lehrer's case is not a problem for explanationists.

²⁸ Goldman, "Toward a Synthesis," 277-78.

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on the deck. Second, Goldman's justification cannot be accounted for in terms of explanatory considerations.

Again, one might be tempted at first glance to agree with Goldman about this case. Certainly, it seems true to claim that there being (at least) four animals on the deck does not explain there being two squirrels and two birds on the deck. So, one might think that this is a case where a proposition is justified for S, but it is not justified because of explanatory considerations.

Yet again, to accept that Goldman has produced a problematic case for explanationism would be a mistake. Goldman assumes that explanationists are committed to claiming that <there are (at least) four animals on the deck> explains <there are two squirrels and two birds on the deck>. However, explanationists are not committed to this at all. Plausibly, in this case Goldman's evidence includes his evidence for believing that there are two squirrels on the deck and there are two birds on the deck. He also has evidence that supports thinking that squirrels and birds are animals as well as an understanding of basic arithmetic (that two animals plus two animals equals four animals, for instance). Further, it is plausible that Goldman's evidence includes his awareness that the truth of <there are (at least) four animals on the deck> follows from there being two squirrels and two birds on the deck. It is because of the fact that Goldman has all this evidence that <there are (at least) four animals on the deck> is justified for him. Explanationists can plausibly maintain that the reason this proposition is justified by Goldman's evidence is that part of the best explanation for why he has awareness of <there are (at least) four animals on the deck> following from his evidence is that this proposition is true. Thus, again there does not seem to be a problem for *Ex-EJ 2.0* or explanationism more generally here. So, *Ex-EJ 2.0* is independently motivated, provides a convincing response to Byerly's golf case, and yields the intuitively correct results in cases of logical entailment and arithmetical inference. The challenge to necessity put forward by B&M seems to be overcome by *Ex-EJ 2.0*. Now it is time to consider B&M's challenge to the sufficiency of explanationism.

2. The Challenge to the Sufficiency Condition of Explanationism

2.1 B&M's Case

B&M attack the sufficiency condition of *Ex-EJ* (and explanationist theories more generally) by presenting a case where they claim a particular proposition is part of the best explanation of the subject's evidence, but intuitively she is not justified in believing that proposition. Before examining the details of B&M's case it is worth noting two points. First, B&M's case is one where (i) of *Ex-EJ* is satisfied. Since

both *Ex-EJ* and *Ex-EJ 2.0* include (i), if their case is successful it poses just as severe a problem for *Ex-EJ 2.0* as it does for *Ex-EJ*. Second, B&M suggest that their objection to the sufficiency condition of *Ex-EJ* is “related to, though importantly different than, the problem of the bad lot for abductive arguments.”²⁹ Although it is a somewhat minor point, I think it is worth emphasizing that B&M mischaracterize their own objection here. The best of a bad lot objection to abductive arguments is the objection that alleges one is not justified in inferring the truth of the hypothesis that best explains one’s data because that hypothesis may simply be the best explanation among a set of explanations all of which are bad.³⁰ In B&M’s case, however, they explicitly acknowledge that the explanation under consideration is a very good explanation. As will become apparent once the details of B&M’s case are made clear, the sort of objection B&M make is similar to what P. Kyle Stanford terms “the problem of unconceived alternatives,” rather than the bad lot objection.³¹ Roughly, the problem of unconceived alternatives is an objection to scientific realism that claims we are not justified in accepting our best scientific theories as true even though they best explain our data because we have good reason to think that there are likely alternatives to these theories, which we are yet to think of, that would explain the data equally well (or better). While this is a minor point it is worth emphasizing because characterizing their objection as related to the bad lot objection, rather than the problem of unconceived alternatives, may lead some to mistakenly think that responses that are effective against the bad lot objection would be effective against B&M’s objection to explanationism. Likewise, recognizing the similarity between B&M’s objection and the problem of unconceived alternatives may allow advances in responding to one problem to shed light on the other.

It is worth quoting B&M’s case in its entirety so that it is completely clear:

Imagine that Sally is the lead detective on an investigation of a burglary. She typically uses an eight-step investigative procedure for crimes of this sort and this procedure involves gathering and analyzing multiple kinds of evidence – physical evidences, forensic evidences, testimonial evidences, psychological evidences, circumstantial evidences, and so on. Sally is now mid-way through her investigative procedure, having completed four of the eight steps. She has gathered and analyzed the appropriate evidence for these four steps, but has not yet gathered or analyzed evidence that may or may not arise during the final four steps. The list of suspects with which Sally began has been narrowed, and there is

²⁹ Byerly and Martin, “Problems for Explanationism,” 782.

³⁰ See Bas van Fraassen, *Laws and Symmetry* (Oxford: Clarendon Press, 1989).

³¹ P. Kyle Stanford, *Exceeding Our Grasp: Science, History, and the Problem of Unconceived Alternatives* (New York: Oxford University Press, 2006).

one very promising suspect in particular named Jeremy. In fact, the claim <Jeremy committed the burglary> (call this the *Jeremy hypothesis*) is the best explanation available to Sally for all of the evidence she currently has obtained through the first four steps. There are multiple witnesses locating someone who fits Jeremy's description at the scene of the crime at the time at which it was committed. Some drug paraphernalia like that which Jeremy commonly uses to feed his drug habit was found at the scene of the crime. Jeremy seems to display a sense of satisfaction or gladness about the robbery. His bank account reflects a deposit shortly after the incident. Other current suspects, while not ruled out, do not fit the evidence Sally currently has anywhere nearly as well as Jeremy does. The Jeremy hypothesis is the best available explanation for the evidence Sally currently has and it is a very good explanation of that evidence.

But Sally isn't justified in believing the Jeremy hypothesis. For, she has good reason to think that there may very well be relevant evidence concerning the burglary that she does not currently have. After all, there have been many times in the past where, after completing step four of her investigation, things took a dramatic swing. It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects. Thus, while the Jeremy hypothesis is the best available explanation of the evidence Sally currently has, and while it is even a very good explanation of that evidence, Sally is not justified in believing this hypothesis. Believing the Jeremy hypothesis would be premature. The correct explanation for Sally's data may very well not be available at present, and she has good reason to think this.³²

So, B&M claim that satisfying (i) of Ex-EJ is not sufficient for justification. This is a problem that they believe extends to explanationist theories more generally because their case is allegedly one in which Sally is not justified in believing that the best explanation of her evidence is true – even when that explanation is a very good one.

2.2 Defending a Dismissed Response

B&M consider, and ultimately dismiss, a number of potential responses that explanationists might make to their case. In this section I will argue that one of the responses B&M dismiss in fact provides a convincing response to their objection on behalf of the explanationist. This "total evidence" response is one that B&M acknowledge I suggested to them in correspondence. By showing this response is successful, I will have defended *Ex-EJ 2.0* as well as other explanationist theories from B&M's attack on the sufficiency condition.

³² Byerly and Martin, "Problems for Explanationism," 783.

The key insight of the total evidence response is that explanationists claim that in order for a proposition to be justified it is not enough that the proposition is part of the best explanation of a portion of one's evidence, it must be part of the best explanation of one's total evidence.³³ So, in B&M's case the total evidence response involves recognizing that while the Jeremy hypothesis may be the best explanation of *part* of Sally's evidence, it is not part of the best explanation of her *total evidence*. The reason for this is that Sally's total evidence includes "good reason to think that there may very well be relevant evidence concerning the burglary that she does not currently have. After all, there have been many times in the past where, after completing step four of her investigation, things took a dramatic swing. It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects."³⁴ Since "It has not at all been uncommon that at these later stages in the process, an alternative suspect emerges who fits the data even better than previous suspects," presumably from Sally's perspective the odds of there being a rival to the Jeremy hypothesis that is as good, or better, of an explanation than the Jeremy hypothesis is at least .5. In light of this, it is plausible that the best explanation of Sally's data (or at least an explanation that is equally as good as the Jeremy hypothesis) is that some currently unconceived hypothesis is correct. So, the explanationist can reasonably maintain that the Jeremy hypothesis fails to satisfy *Ex-EJ 2.0* for Sally because it is not the best explanation of her total evidence (there is a rival that is at least as good).

B&M object to the total evidence response on the grounds that "there is no rival hypothesis to the Jeremy hypothesis ready at hand."³⁵ Their point is that Sally does not have a hypothesis about a particular suspect that is as good of an explanation of her evidence as the Jeremy hypothesis. They claim that because of this lack of a rival hypothesis that includes a particular suspect the Jeremy hypothesis remains the best explanation of Sally's evidence. They claim this is so despite the fact that Sally "has reason to think that the Jeremy hypothesis may well not be the correct explanation for her current evidence."³⁶

The mistake B&M are making here is to assume that the hypothesis that one is justified in believing must be a specific one rather than a general one. Consider a

³³ This is something that I mention explicitly in several places. See, for example, "Explanationist Evidentialism," 303 and *Evidentialism*, 65. Other explanationists emphasize this as well, e.g. Conee and Feldman, "Evidence" and Poston, *Reason & Explanation*.

³⁴ Byerly and Martin, "Problems for Explanationism," 783.

³⁵ Byerly and Martin, "Problems for Explanationism," 785.

³⁶ Byerly and Martin, "Problems for Explanationism," 785.

simple case. You have been away from your home for an hour. You return to find that your door, which you distinctly remember locking, has been forced open. When you enter the house all of your belongings are gone. In a typical situation of this sort (setting aside strange cases where you have evidence that you may be the subject of some sort of elaborate prank) the best explanation of your evidence is that someone or other robbed you. This is the best explanation even though you do not have a particular suspect in mind. To make this point even clearer add to the case that you notice your neighbor's five-year-old son has been playing in your yard, and he still is. One hypothesis that is available to you is that your neighbor's five-year-old son robbed you. However, given your background evidence concerning what would be required to break open your door, move your belongings, etc. the hypothesis that someone other than the five-year-old stole your belongings is a better explanation than the hypothesis that your neighbor's five-year-old son robbed you. This is so even though you do not have a hypothesis concerning who that other suspect might be.

The lesson here is that explanationism does not require that the best explanation of your *total evidence* be a precise explanation of a particular proper subset of your total evidence – the best explanation can be a general hypothesis. Once we recognize this it is easy to see that while the Jeremy hypothesis may be the best explanation of a proper subset of Sally's evidence, it is not the best explanation of her total evidence. Further, the best explanation of Sally's total evidence does not have to include a precise explanation of the particular subset of her evidence that B&M focus on. Thus, it seems that B&M's case fails to pose a problem for the sufficiency condition of *Ex-EJ 2.0*, or explanationist theories in general.

3. Conclusion

B&M's arguments are successful to some degree – they seem to demonstrate that *Ex-EJ* faces problems. Yet, they do not ultimately succeed in showing that explanationism fails as a theory of epistemic justification. Despite the fact that they are not fully successful, their arguments do push the debate over explanationism forward. The sorts of revisions to *Ex-EJ* that B&M's attack on its necessity condition prompts are important and help to motivate an improved explanationist theory, *Ex-EJ 2.0*. Additionally, while their attack on the sufficiency condition of *Ex-EJ* fails, it does help to reinforce the importance of focusing on an agent's total evidence, and discussion of their attack makes clear the sort of explanations that explanationists are committed to claiming are justified. As is clear from the present discussion, B&M's attacks did put

explanationist views “under fire from two directions at once” and they prompt a reworking of the initially plausible explanationist principle put forward in my earlier work.³⁷ Nonetheless, as I have shown here, explanationism can be defended on all sides from B&M’s attacks in intuitively satisfying ways. Thus, explanationism remains a viable theory of epistemic justification that warrants further investigation.³⁸

³⁷ Byerly and Martin, “Problems for Explanationism,” 790.

³⁸ Thanks to Bryan Appley, Kenny Boyce, Matt Frise, Ted Poston, and audiences at the 39th Annual MidSouth Philosophy Conference and the 2015 Society of Christian Philosophers Midwest Meeting for helpful comments and discussion.

DOES SUPPOSITIONAL REASONING SOLVE THE BOOTSTRAPPING PROBLEM?

James VAN CLEVE

ABSTRACT: In a 2002 article Stewart Cohen advances the “bootstrapping problem” for what he calls “basic justification theories,” and in a 2010 followup he offers a solution to the problem, exploiting the idea that suppositional reasoning may be used with defeasible as well as with deductive inference rules. To curtail the form of bootstrapping permitted by basic justification theories, Cohen insists that subjects must know their perceptual faculties are reliable before perception can give them knowledge. But how is such knowledge of reliability to be acquired if not through perception itself? Cohen proposes that such knowledge may be acquired *a priori* through suppositional reasoning. I argue that his strategy runs afoul of a plausible view about how epistemic principles function; in brief, I argue that one must actually satisfy the antecedent of an epistemic principle, not merely suppose that one does, to acquire any justification by its means – even justification for a merely conditional proposition.

KEYWORDS: bootstrapping, suppositional reasoning, defeasible rules, *a priori* justification, frontloading

In an influential article, Stewart Cohen advances the “bootstrapping problem” for what he calls “basic justification theories.”¹ In a followup, he offers a solution to the problem, exploiting the idea that suppositional reasoning may be used with defeasible as well as with deductive inference rules.² He argues that suppositional reasoning with the basic justificationist’s principles may be used to obtain *a priori* justification for believing in the reliability of perception, and that the availability of this *a priori* justification enables us to avoid what is bad about bootstrapping.

I argue that the suppositional reasoning strategy Cohen proposes runs afoul of a plausible view about how epistemic principles function. To acquire justification by means of an epistemic principle, one must actually *satisfy* the antecedent of the principle, not merely *suppose* that one does, so suppositional reasoning cannot yield *a priori* justification regarding the reliability of perception. Consequently, the bootstrapping problem is still with us.

¹ Stewart Cohen, “Basic Knowledge and the Problem of Easy Knowledge,” *Philosophical and Phenomenological Research* 65 (2002): 309-29.

² Stewart Cohen, “Bootstrapping, Defeasible Reasoning, and *A Priori* Justification,” *Philosophical Perspectives* 24 (2010): 141-59.

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Though I focus on Cohen, my criticisms have broader relevance. As explained in the final section, they are applicable as well to Chalmers' use of "frontloading" as a strategy in his neo-Carnapian program of "constructing the world."³

1. The Problem and Its Solution

The following skeptical dyad lies in the background of Cohen's treatment of the bootstrapping problem:

- (1) We cannot have justified perceptual beliefs without having a prior justified belief that perception is reliable (or at least having propositional justification for the thesis that perception is reliable).⁴
- (2) We cannot be justified in believing perception is reliable (or even have propositional justification for it) without having prior justified perceptual beliefs.

If (1) and (2) are both true, perceptual knowledge is impossible, for we would need to have justified perceptual beliefs before we had them. If a disastrous skepticism is to be avoided, then, one proposition in the dyad must be denied. Some theorists deny (1), maintaining that we can acquire justified perceptual beliefs without having any antecedent justification for thinking perception reliable. Such theorists Cohen calls basic justification theorists. Others deny (2), maintaining that there is *a priori* justification for believing that perception is reliable. Cohen is in the latter camp. He argues that the bootstrapping problem shows that (1) must be upheld and that the possibility of using suppositional reasoning in the way he suggests shows that (2) may be denied.

Basic justification theorists hold that perceptual experience provides *prima facie* or defeasible justification for perceptual beliefs even if the subject has no justification for believing that perception is reliable. The mere fact that an object looks red to you may make you *prima facie* justified in believing that the object is red, regardless of whether you have any reason to think your perceptual systems are reliable. That being so, a subject is in a position to learn that his color vision is reliable by going through a course of reasoning with the following steps:

Card 1 looks red.

Card 1 is red.

³ David Chalmers, *Constructing the World* (Oxford: Oxford University Press, 2012).

⁴ Cohen's formulation leaves out the parenthetical expression, but his subsequent discussion indicates that it should be there (154).

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Card 1 looks red and is red – it is the way it looks.

Similarly for cards 2 through n .

Therefore, my color vision is reliable.

Such is bootstrapping – a procedure that strikes many people as absurdly easy, since one reaches a conclusion about the reliability of one's color vision without testing it in any independent way. After considering and dismissing a number of restrictions that a proponent of basic justification might use to block bootstrapping, Cohen advances his own solution to the problem of how to avoid skepticism without condoning bootstrapping as a way of knowing.

As Cohen construes them, basic justification theories endorse the following as a correct though defeasible inference rule (I extend the use of ' \vdash ' so that it may express defeasible as well as deductive rules):

a looks red $\vdash a$ is red.

Something's looking red defeasibly justifies you in believing that it is red. Your justification may be defeated – you may learn that there are red lights playing on the object, for instance – but in the absence of defeaters, your justification stands.

Cohen's idea is that if the foregoing inference rule is correct, it may be used in something analogous to what logic books call conditional proof, generalized to apply to defeasible as well as deductive rules. The more general procedure he calls suppositional reasoning. One of his examples is based on the defeasible inference rule of statistical syllogism – most Fs are Gs, x is an F $\vdash x$ is a G:

1. Most pit bulls are dangerous (supposition for suppositional reasoning, not known to be true).
2. That dog is a pit bull (background knowledge)
3. That dog is dangerous (inferred from 1 and 2 by statistical syllogism).
4. Therefore, if most pit bulls are dangerous, that dog is dangerous (from 1-3 by suppositional reasoning).

If one were claiming to reach a conclusion that was entirely *a priori*, one would have to discharge assumption 2 as well, adding it to the antecedent of 4.

Let's see how Cohen proposes to use suppositional reasoning to avoid what is bad about bootstrapping and to arrive at *a priori* justification for the reliability of perception. Without looking at card 1, I simply *suppose* that it is red. From that supposition, I infer by my defeasible rule the provisional conclusion that card 1 is red. I then infer by suppositional reasoning that if card 1 looks red, it is red. I do the same for each of cards 1 through n . Conjoining the conditionals and using enumerative induction, I then arrive at the conclusion *for every card, if it looks*

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red to me, it is red. I can do the same for all the other colors to which the rule applies. My vision, at least as regards the colors of cards, is reliable.

Actually, Cohen is not totally explicit about the procedure by which he thinks the conclusion about reliability is to be derived. A more compact way than the one I just described would couple suppositional reasoning with universal generalization instead of induction:

Card x looks red (supposition employing a free variable).

Card x is red (inferred from 1 by the basic justification theorist's defeasible rule).

If card x looks red, card x is red (inferred from 1 and 2 by suppositional reasoning).

For any card, if it looks red to me, then it is red (inferred from 3 by universal generalization).

Cohen does not identify any such universal generalization procedure or commit himself to it. Nonetheless, if defeasible inference rules may be used in suppositional reasoning at all, they may presumably be used when the supposition is framed using a free variable, thus making universal generalization legitimate.

Cohen maintains that by suppositional reasoning one may achieve, if not quite a *proof* of the reliability of one's color vision, at least a defeasible *a priori* justification for belief in the reliability of it. This strategy is supposed to show that (2) in the skeptical dyad is false – there is an *a priori* method, not involving perception, whereby one may possess propositional justification for the reliability of perception. Although Cohen thinks basic justification theorists are wrong to deny (1) in the dyad, his strategy concedes that the defeasible rules of justification they propound are correct. His strategy also concedes that the bootstrapping reasoning outlined above contains no mistake. It is just that it does not give you any *additional* reason to believe in the reliability of your vision – any reason that was not already available to you just by virtue of your competence in the defeasible rule.⁵

2. Experiential Justification and a Lesson from Descartes

To explain why I think Cohen's strategy does not work, I begin by distinguishing two routes to being justified in believing something. One route – the only one

⁵ I have encountered the opinion that Cohen's aim is to reduce the basic justificationist's rules to absurdity by showing that they permit an *a priori* proof of reliability. On the contrary, Cohen endorses both the rules and the *a priori* proof; his point is that bootstrapping is harmless because it does nothing to add to the justification one already had for thinking perception reliable.

recognized by Cohen – proceeds in terms of reasons; the other proceeds in terms of experiences.

In the reasons route, one “has” a reason, which supports some further proposition. A typical case would involve believing some premises and inferring a conclusion from them; the premises would be one’s reasons (or their conjunction one’s reason). Cohen is willing to speak also of reasons in cases in which one does not believe the premises or draw any explicit inference. I think this much is clear, however: having a reason *P* that supports *Q* does not make you justified in believing *Q* (or make *Q* propositionally justified for you) *unless P is justified for you*. This point suggests (by an all-too-familiar argument) that there must be a mode of justification that does not involve having reasons: if justification for *Q* always involved a reason, then (since the reason would have to be justified), there would be either an infinite regress of reasons or a circle of reasons.

There must then be reasons that are justified by some factor that is not itself justified, and that means there must be reasons justified by something other than reasons. By what, then? By *experiences*, broadly speaking: perceptual experiences, memory experiences, intuitions or “intellectual seemings,” and perhaps other varieties of experience as well. Being in the state of seeming to remember eating eggs for breakfast yesterday justifies you in believing that you *did* eat eggs for breakfast yesterday, and being in the state in which something looks red to you justifies you in believing that the thing is red.⁶ The justification need only be *prima facie* – other information could come to light that would defeat your justification. But according to basic justification theories that recognize this second mode of justification, being in one of these states is *all it takes* to generate justification – there is no additional requirement that one have justification for thinking the experiences are reliable indicators of the truth of what they justify.⁷

In insisting on this second mode of justification – let me call it the experiential mode – I may be rejecting one of the assumptions of Cohen’s article, which he puts as follows:

⁶ If someone were to insist that ‘*x* is red’ is justified by the *reason* ‘*x* looks red,’ what would justify the reason? Would it not have to be the subject’s being in the state of having *x* look red to him? Sooner or later we must have recourse to experiential justification.

⁷ Basic justification theorists who countenance experiential justification include Roderick Chisholm in his *Theory of Knowledge*, 2d edition (Englewood Cliffs, NJ: Prentice-Hall, 1977), James Pryor in his “The Skeptic and the Dogmatist,” *Nous* 34 (2000): 517-49, and Michael Huemer in his *Skepticism and the Veil of Perception* (Lanham, MD: Rowman and Littlefield, 2001). John Pollock is a basic justification theorist in his *Knowledge and Justification* (Princeton: Princeton University Press, 1974), but to the extent that he insists that all justification proceeds in terms of reasons, it is not clear that he countenances experiential justification.

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Perceptual justification proceeds in terms of propositional, i.e., propositionally representable, reasons concerning how things appear. (150)

I am not sure I fully grasp everything Cohen means by this or whether I am indeed rejecting it. If I am, I suspect I am quarreling with the ‘reasons’ part rather than the ‘propositional’ part.⁸

To repeat, a basic justification theorist who recognizes an experiential mode of justification would say that there are certain perceptual experiences that are *all it takes* to make you prima facie justified in believing certain things – there is no additional requirement that you be justified in believing that perception is reliable. Cohen thinks there *is* such a requirement, and that it can be satisfied by suppositional reasoning. But how would suppositional reasoning work in the framework of an experiential theory, in which what justifies me in believing that something is red is the experiential state of something’s looking red to me?

First, I would make the supposition that *x* looks red to me; let’s say I write it down. Next, I would conclude that *x* is red and write that down, too. But what authorizes me in doing that? What it takes to make me justified in believing that something is red is *being in the state* of having it look red to me, and I am not in that state.

I may seem to be raising a silly objection. Why could someone not raise a similar objection to conditional proofs in logic books? “What justifies you in writing down the next line after the supposition? You are not in any state that warrants you in doing so.” Well, you are justified in writing it down because *you know it follows from the supposition and antecedent lines*. You may not be justified in accepting it outright, but you are justified in accepting it conditionally. (More accurately, you are justified in accepting the conditional: if the supposition, then the conclusion drawn from it.) But in the perceptual setting, is a subject similarly entitled to infer that a thing is red from the supposition that it looks red? Not unless he knows that if a thing looks red, it is red (or, more cautiously, that if

⁸ Some epistemologists seem to me to stretch the word ‘reason’ to the breaking point. A case in point is Fred Dretske, for whom experiential states qualify as reasons (“Conclusive Reasons,” *Australasian Journal of Philosophy* 49 (1971): 1-22). When R is a reason for P, he says a subject S *has* R as his reason for P provided he believes P on the basis of R and R is either (i) something S knows to be the case or is (ii) an experiential state of S. Can the same type of R really play both of the roles (i) and (ii)? What is known to be the case is a proposition, but is an experiential state also a proposition? An experiential state may have a proposition for its content, and there may be a proposition saying that one is in the state, but it does not seem right to me to say that the state *is* a proposition. In any case, we must come to a point at which it is states that do the justifying.

a thing looks red, one is *prima facie* justified in believing it to be red).⁹ But where is that knowledge supposed to come from? And are there not many subjects who lack it? If a thing did look red to them, their being in that state would prompt the belief that something is red and make it *prima facie* justified for them, but if they merely *supposed* that something looks red to them, they would be in no position to draw further conclusions.

Let me take a case from the history of philosophy to illustrate what I am driving at. The fundamental principle of Descartes's epistemology is that there is a certain sort of illuminous and irresistible intellectual seeming that confers certainty on its objects – as he formulated it, “Whatever I clearly and distinctly perceive to be true is certain.” Descartes sought to validate this principle by deducing it from the existence and veracity of God, and he held that only after doing this could one be certain that the principle itself is true. To this contention, his critic Mersenne objected, “Are you not implying, implausibly, that an atheist cannot know any of the truths of geometry?” Descartes's answer was *no*.¹⁰ The atheist can be certain of truths of geometry as well as I can, Descartes said, *when* he is clearly and distinctly perceiving them to be true. That is because clear and distinct perception is a state by being in which you become certain of its objects. The atheist need not know that clear and distinct perception is reliable or certainty-producing in order to acquire certainty by means of it – Descartes is a basic justification theorist in Cohen's terms, as well as an experiential theorist in mine. But Descartes claimed an epistemic advantage over the atheist nonetheless. He claimed that at a time when he and the atheist were both *remembering* having a clear and distinct perception of a certain truth T (but not currently doing so), Descartes, but not the atheist, would still know that T is true. (We may suppose that each of them may trust his memories.) Descartes, having proved the epistemic principle above, would be in a position to use it to infer T. The atheist would not. The atheist's knowledge would therefore be meager and fleeting. To restore it, he

⁹ The more cautious formulation may prompt the following question: why would the practitioner of suppositional reasoning be entitled to write down ‘the thing is red’ rather than ‘I am justified in believing the thing to be red’? In the latter case, what is proved at the end would not be ‘my color vision reliably produces true beliefs’ but ‘my color vision reliably produces justified beliefs.’

¹⁰ René Descartes, *Selected Philosophical Writings*, edited and translated by John Cottingham, Robert Stoothoff, and Dugald Murdoch (Cambridge: Cambridge University Press, 1988), 40.

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would have to get back into a state of clear and distinct perception with respect to the lost truths, which can only be done with respect to a few things at a time.¹¹

Now let's bring Cohen's strategy into the picture. If epistemological principles are always to be recast in terms of reasons and rules in the way he posits, and if suppositional reasoning works the way he thinks it does, then the atheist's disadvantage quickly evaporates. For the atheist can reason as follows – as a geometer, he is no doubt adept at conditional proof:

I have a clear and distinct perception of P (supposition).

P is true (inference from the above using Descartes's rule, which Descartes says governs the atheist as well as anyone else).

If I have a clear and distinct perception of P, P is true (from the previous steps by suppositional reasoning).

For any P, if I have a clear and distinct perception of P, then P is true (from the previous step by universal generalization).

Yesterday I had a clear and distinct perception of T (as memory attests).

Therefore, T is true.¹²

In this fashion, the atheist can know everything Descartes can know.

It seems to me that Descartes has a coherent epistemology (whatever its overall merits) and that he would rightly object to this way of the atheist's closing the epistemic gap between them. Although clear and distinct perception is a *prima facie* justifier (and indeed a source of certainty) for the atheist as well as for Descartes, it does not work in the way envisioned in the suppositional reasoning above. Clear and distinct perception gives you knowledge *only when you are in its throes*. Or if you are not in its throes, it contributes to your knowledge only because you know that you once had it (or someone else has it) *and* that Descartes's rule is true – whatever is clearly and distinctly perceived is certain. To get knowledge of conditional propositions by using the rule in suppositional reasoning, therefore, you would have to know that the rule is correct, but that is precisely what the atheist does not know. Nor does Descartes himself know it at the beginning of his project in the *Meditations*.

¹¹ Here I am following the account of Descartes's advantage over the atheist given in James Van Cleve, "Foundationalism, Epistemic Principles, and the Cartesian Circle," *The Philosophical Review* 88 (1979): 55-91.

¹² If you wonder how the atheist knows the theorem he proved yesterday is still true today, suppose the content of yesterday's clear and distinct perception was the *eternal* truth of T.

Descartes's epistemology permits something akin to bootstrapping reasoning, but it is bootstrapping not mitigated by Cohen's strategy.¹³ Perhaps it will be said that all I have done is to point out that there are epistemologies beyond the reach of rescue by Cohen, in which case, so much the worse for them.¹⁴ I am inclined to think, however, that salient features of these epistemologies may be indispensable in *any* epistemology – a point to which I return in section 4.

3. An Incoherence?

Though Descartes is sometimes regarded as an arch-internalist, his theory is actually externalist in two important senses. First, clear and distinct perception is a state that gives you knowledge regardless of whether you know you are in that state. Second, clear and distinct perception is a state that gives you knowledge regardless of whether you know anything about (or have propositional justification regarding) the reliability of such states.¹⁵ It is the second feature that makes Descartes's theory a basic justification theory in Cohen's sense and a "dogmatic" or "liberal" theory in Pryor's sense. Cohen maintains that basic justification theories are incoherent (150), but I wish to raise the possibility that his objection to them is incoherent.

Cohen himself uses the defeasible justification rules espoused by basic justification theorists, such as the rule letting you pass from *x looks red* to *x is red*. The idea behind the rule can perhaps be expressed by saying "something's looking red to you makes you prima facie justified in believing that it is red" or, in other words, "something's looking red to you is *sufficient* (in the absence of defeaters)

¹³ Descartes's procedure is not the bootstrapping of current discussion, but it is a species of the same genus. The genus is using a source to know premises from which you subsequently infer that the source is reliable. In Descartes's case, the source is clear and distinct perception and the premises are propositions about causation and God. In the bootstrapper's case, the source is color perception and the premises are propositions about the colors of cards and thus about the accuracy of one's color perception in various particular instances. Both species would be ruled illegitimate by (1) in the skeptical dyad or an appropriate analog of it for sources other than perception. Incidentally, since Descartes regarded clear and distinct perception as a conclusive rather than a prima facie justifier, we see from his epistemology that defeasible justification rules are not essential for generating bootstrapping problems.

¹⁴ Cohen suggests that there are forms of reliabilism that make bootstrapping possible while lying beyond his help ("Bootstrapping," 156).

¹⁵ In the terms used by W.P. Alston in "An Internalist Externalism," *Synthese* 74 (1988): 265-83, Descartes is not a perspectival internalist with regard either to the obtaining of one's grounds or to their epistemic adequacy.

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for your justifiably believing that it is red.” At the same time, he parts company from basic justification theorists by affirming proposition (1) in the skeptical dyad: he says that no one has justified perceptual beliefs who does not have prior justification for thinking perception reliable. He thinks the required prior justification is available *a priori*, thanks to suppositional reasoning using the basic theorists’ own rules. I gather this is where the incoherence in their view is supposed to lie: they insist that you can have justified perceptual beliefs via the rules without having any justification for the reliability of perception, but you inevitably do have it thanks to the suppositional strategy. In affirming (1), however, must Cohen not say that the justification rules are *not* correct as they stand? Something’s looking red to you is *not* sufficient, even in the absence of defeaters, for yours being justified in thinking it is red. More is necessary. The correct rule must be stated in some more complex way, perhaps as follows:

x looks red to S & S has justification for thinking perception is reliable

$\vdash x$ is red

Or perhaps self-referentially, as follows:

x looks red to S & S can use this very rule to know x looks red to $S \rightarrow x$ is red

$\vdash x$ is red

In any case, it seems that Cohen cannot really endorse the rule as originally stated – as expressing a sufficient condition for *prima facie* justification.

In correspondence, Cohen has disavowed the more complicated formulations of the rule above and insisted that he does take x looks red to be sufficient for having propositional justification for x is red. But if it were truly sufficient, nothing else (nothing not entailed by it) would be necessary. And Cohen does take justification regarding reliability to be necessary – that is precisely his bone of contention with the basic justification theorist. It may not be necessary in the sense that it must figure as a premise in the subject’s reasoning, but it is necessary in the sense that if the subject lacked propositional justification for the reliability of his color vision, a thing’s looking red to him would not justify the proposition that it is red.¹⁶

¹⁶ Here may lie a difference between how Cohen and I conceive of epistemic principles. If he takes them to be rules that license transitions from premises to conclusions, he may well balk at saying the reliability of one’s color vision must be included in the antecedent. But if epistemic principles are meant (as I take them) to give sufficient conditions for a subject’s possessing justification for something, then justification for the reliability of one’s color vision *must*, on Cohen’s view, be included in the antecedent – otherwise he would not be disagreeing with the basic justification theorist.

4. Epistemic Supervenience

When I said above that the features of Descartes's epistemology that put it beyond the reach of rescue by Cohen may be indispensable to any epistemology, that was because I think any acceptable epistemology must respect the principle of *epistemic supervenience*. This principle could be put as follows: if two beliefs (occurring in the same or different worlds) are just alike in all *nonepistemic* respects – in their content, their environmental causes, the experiences that accompany them, their relations to the other beliefs of the subject, and so on – then they are also alike in epistemic status; both are justified to the same degree. Equivalently, whenever a belief is justified or has a certain epistemic status, it also has some constellation of nonepistemic properties such that (necessarily) any belief with those properties is justified. For short, for any epistemic property any belief possesses, there is a nonepistemic sufficient condition for it.

In Descartes's theory, being in a state of clear and distinct perception is precisely such a sufficient condition, and it bestows knowledge to those who are in it regardless of whether they know clear and distinct perception to be reliable. "Regardless of whether they know it to be reliable" – that is the "externalist," "dogmatic," or "liberal" feature to which Cohen and many other contemporary writers object. But how are we to reject this element without violating the principle of epistemic supervenience? We would certainly flout it if we said "no factor you can cite gives you knowledge of P unless you know that factor is reliably connected with what it purports to give knowledge of." In that case, we would be saying that there are no epistemic consequents without epistemic antecedents.

I do not say that epistemic supervenience requires us to deny proposition (1) in the skeptical dyad. Perhaps there is a way of spelling out in nonepistemic terms conditions sufficient for being justified in perceptual beliefs, but no way of doing so that does not also provide sufficient conditions for being justified in beliefs about the reliability of perception. In that case, (1) would be true and supervenience respected. The holistic coherence view sketched by Cohen in his 2002 response to the bootstrapping problem upholds (1) without violating supervenience. But I do not see how the suppositional reasoning approach accomplishes this feat.

5. Frontloading

My objection to Cohen's use of suppositional reasoning potentially carries over to Chalmers' use of "frontloading" principles in *Constructing the World*. One of the principal theses of the book is Conditional Scrutability, which says there is a

certain class of basic truths, designated as PQTI, such that for any true proposition S, it is knowable that if the truths in PQTI obtain, then S is true. PQTI contains all physical truths, phenomenal or qualitative truths, “that’s all” or totality truths, and indexical truths. A more ambitious thesis is *A Priori* Scrutability, which is like Conditional Scrutability except it adds that the conditional *if PQTI, then S* is knowable *a priori*. To extend Conditional Scrutability to *A Priori* Scrutability, Chalmers uses a “frontloading argument:” if the conditional *if PQTI, then S* is justified by empirical evidence E, then the conditional *if PQTI & E, then S* is justified independently of E. The evidence E itself is derivable from PQTI given its composition, so the original *if PQTI, then S* is knowable *a priori*.

Chalmers notes that the argument just given relies on the following frontloading principle: “If one knows M with justification from E ... then one can have conditional knowledge of M given E with justification independent of E” (162). The idea is that if E justifies M, one could suppose E for the sake of conditional proof, conclude M from this supposition, and then discharge the supposition, arriving at a belief in the conditional *if E, then M* that is justified independently of E.

If E justifies M in the experiential mode I have described, my objection to Cohen applies with equal force to Chalmers. In the experiential mode, you get justification for M by being *in* the phenomenal state described by E, not merely by supposing E is true. The route Chalmers proposes for obtaining justification for *if E, then M* is therefore cut off.

There may be a qualified version of the frontloading principle that works in Chalmers’ overall project. In Chalmers’ use of the frontloading principle, M is itself a conditional proposition, namely, *if PQTI then S*.¹⁷ Perhaps when empirical evidence E justifies a conditional, it does so in a “reasons” mode, not an experiential mode, and perhaps in that case, suppositional reasoning goes through. Nonetheless, his frontloading principle as stated is open to the same objection I have raised against Cohen.

It may be an implication of what I say here about experiential justification that acquiring evidence E can give you knowledge of a proposition H even though there was no antecedently high subjective probability for you of H given E.¹⁸ If so, Bayesian conditionalization is not the only way in which acquiring new evidence

¹⁷ I presume that the conclusion of the frontloading argument is obtained by using the frontloading principle with M instantiated to *if PQTI then S*, then using the logical law of exportation.

¹⁸ See Chalmers, *Constructing the World*, 177.

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can make a contribution to what you know – but that is a subject for another occasion.¹⁹

¹⁹ For helpful comments on earlier drafts of this paper, I thank Mark Schroeder, Jacob Ross, Ram Neta, David Chalmers, and Stewart Cohen.

DISCUSSION NOTES/ DEBATE

ON HAVING EVIDENCE: A REPLY TO NETA

Arturs LOGINS

ABSTRACT: According to one line of thought only propositions can be part of one's evidence, since only propositions can serve the central functions of our ordinary concept of *evidence*. Ram Neta has challenged this argument. In this paper I respond to Neta's challenge.

KEYWORDS: evidence, Ram Neta, Timothy Williamson, propositions, central function of *evidence* argument

According to one influential line of thought only propositions can be part of one's evidence, since only propositions can serve the central functions of our ordinary concept of *evidence*. Namely, only propositions can serve functions of inference to the best explanation, figuring in probabilistic confirmation and ruling out of hypotheses.¹ Consider inferences to the best explanation. You cannot explain cucumber. You can explain why cucumbers have this or that particular feature, why they are green, why they are classified as accessory fruits, why you like/hate cucumbers, etc. A sentence of the form "Cucumber because ..." is ungrammatical. 'Because' can grammatically conjoin only declarative sentences. Hence, the argument goes, only propositions can figure in inferences to the best explanation. Similar considerations apply to the probabilistic confirmation/reasoning and the ruling out of hypotheses.

The central function argument for the propositionality of *evidence* has been recently criticized. One particularly puzzling challenge consists in questioning the assumed understanding of *explanation*, *probabilistic reasoning* and *exclusion of hypotheses*. The thought is that, contrary to what a proponent of the central function argument suggests, it need not be the case that only propositions can be the *relata* of inference to the best explanation, probabilistic reasoning, and the ruling out of hypotheses. This line of objection has been recently considered by Ram Neta.² In what follows I reply to Neta's objection.

¹ Cf. Timothy Williamson, *Knowledge and its Limits* (Oxford: Oxford University Press, 2000), 194-200.

² In Ram Neta, "What Evidence Do You Have?" *British Journal for the Philosophy of Science* 59 (2008): 89-119.

With respect to the considerations about inferences to the best explanation Neta suggests more specifically:

[E]ven if the conjunction ‘because’ can grammatically conjoin nothing other than declarative sentences, nothing about the *relata* of why-explanations follows from this feature of the conjunction. Might this not be a case in which grammar is metaphysically misleading? ^{3,4}

Neta seems to suggest in this passage that considerations about language use don’t entail one or another view about the *relata* of why-explanations. This much seems to be true, indeed. However, that facts about our language use don’t entail any particular view about why-explanations, doesn’t mean that they provide *no* support whatsoever for one or another view. Moreover, Neta’s own argumentative dialectic relies on the thought that facts about the way we speak *might* support a philosophical view about evidence. Neta proposes, for instance, various examples that, allegedly, support the view that non-propositional items can play a role in explanations and probabilistic reasoning.

Neta claims that the ordinary talk of bloody knives as evidence, of clouds being evidence that it will rain and people “planting evidence” suggests that the grammar of ‘because,’ as it is assumed in the argument from the central functions of evidence is metaphysically misleading.⁵ That is, according to Neta, given the way we ordinarily talk about evidence (in particular by treating objects as evidence) we can infer that the *relata* of why-explanations need not be propositional. This line of thought doesn’t challenge the view that figuring in inferences to the best explanation is a central role of *evidence*. It accepts that it is a central role of *evidence*. Rather, the thought is that given facts about our ordinary language use (in particular the talk of bloody knives as evidence) and the fact that

³ Neta, “What Evidence Do You Have?” 96.

⁴ Neta’s treatment of considerations from probabilistic reasoning and ruling out of hypotheses is similar to his treatment of considerations about inferences to the best explanation. See for instance: “Why should we accept the claim that, ‘when “probability” has to do with the evidential status of beliefs,’ then ‘what has a probability is a proposition’? Why not say instead that what has a probability is, at least in some cases, an event or a state rather than a proposition? What is the probability of the knife’s being (in the state of being) bloody, given that the defendant is guilty?” (Neta, “What Evidence Do You Have?” 97). And: “Let’s grant that only propositions can be inconsistent in the relevant sense. Why should we allow, though, that there is an inconsistency between hypothesis and evidence itself, rather than an inconsistency between hypothesis and one or another statement of the evidence?” (Neta, “What Evidence Do You Have?” 97). Hence, I propose to focus here on his reply to the considerations about inference to the best explanation.

⁵ Cf. Neta, “What Evidence Do You Have?” 96.

figuring in inferences to the best explanation is a central role of the ordinary concept of *evidence*, one is not more warranted in concluding that only propositional items can serve central functions of evidence than one is warranted in concluding that non-propositional items can figure in inferences to the best explanation.

Nevertheless, Neta acknowledges that a proponent of the central function argument for propositionality of evidence might tell a story about cases where one appeals to a bloody knife as evidence. Such a story would supposedly explain what is going on in such cases by an appeal to propositions rather than by a reference to objects. Namely, Neta recognizes:

Of course, it could still be that, when we speak of the bloody knife as *being evidence* that the defendant is guilty, what that amounts to is that there is some proposition that somehow involves reference to the bloody knife, and that is itself evidence that the defendant is guilty.⁶

However, according to Neta, there is a problem for the proponent of the central function argument for the propositionality of evidence if he endorses this kind of explanation. Neta claims:

But if Williamson is willing to defy grammatical appearances in our account of what it is for the bloody knife to be evidence that the defendant is guilty, then why should we not be equally willing to defy grammatical appearances when it comes to why-explanations? The considerations adduced up to now seem to leave it an open question whether the explanantia of our hypotheses are propositional, and so whether evidence is propositional.⁷

However, these remarks are puzzling. The problem with Neta's argument is that where his opponent has proposed an error theory for cases where we say things like "The bloody knife is evidence," Neta has not proposed an alternative explanation of language facts that seem to speak against his proposal (e.g. that 'because' can conjoin only declarative sentences). He has only said that we might defy "grammatical appearances when it comes to why-explanation." One would like to know more about this suggestion before endorsing it. Why does it appear to us wrongly that only propositions can be the *relata* of 'because'? How exactly might we defy grammatical appearances in the case of why-explanation? In absence of a viable error theory that could reply to such questions, Neta's considerations are *ad hoc*. Suggesting merely that there might be an error theory that would enable us to defy grammatical appearances of why-explanations is not enough. Claiming this without a further theoretical motivation is fallacious.

⁶ Neta, "What Evidence Do You Have?" 96.

⁷ Neta, "What Evidence Do You Have?" 96-97.

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Hence, I conclude that Neta's argument fails to undermine the argument for the propositionality of evidence from the central roles of the ordinary concept of *evidence*.⁸

⁸ Thanks to Pascal Engel, Robin McKenna, and Tim Williamson for comments and discussion on earlier versions of the present note. The research work that led to this article was supported by the Swiss National Science Foundation grant number 148553 (project "Evidence and Epistemic Justification") and grant number 161761 (project "Justification, Lotteries, and Permissibility").

IN DEFENSE OF THE KANTIAN ACCOUNT OF KNOWLEDGE: REPLY TO WHITING

Mark SCHROEDER

ABSTRACT: In this paper I defend the view that knowledge is belief for reasons that are both objectively and subjectively sufficient from an important objection due to Daniel Whiting, in this journal. Whiting argues that this view fails to deal adequately with a familiar sort of counterexample to analyses of knowledge, fake barn cases. I accept Whiting's conclusion that my earlier paper offered an inadequate treatment of fake barn cases, but defend a new account of basic perceptual reasons that is consistent with the account of knowledge and successfully deals with fake barns.

KEYWORDS: knowledge, fake barns, Daniel Whiting, Gettier problem, perceptual reasons, seeing that

In earlier article,¹ I defended the view that knowledge can be successfully analyzed as belief for reasons that are both subjectively and objectively sufficient. Since this is Kant's characterization of knowledge in the first *Critique*, let us call this the *Kantian Account*.² My aim in that paper was to argue that the Kantian Account provides a simple and attractive way of making good on the idea that knowledge involves a kind of *match* between subjective and objective factors – the right sort of match to explain why knowledge is *prime*, why it has a distinctive kind of *explanatory power*, along the lines defended by Timothy Williamson,³ and why it exhibits the phenomenon that I call *defeater pairing*, on which, very roughly, objective conditions that defeat knowledge come paired with subjective counterparts.⁴ The Kantian Account, I argued, provides a way of making sense of these things without getting into either of the two major sources of trouble that

¹ Mark Schroeder, "Knowledge is Belief for Sufficient (Objective and Subjective) Reason," *Oxford Studies in Epistemology* 5 (2015): 226-252.

² 'When the holding of a thing to be true is sufficient both subjectively and objectively, it is knowledge' Immanuel Kant, *Critique of Pure Reason*, trans. Werner Pluhar (Indianapolis: Hackett, 1996) A822/B850. Compare especially Andrew Chignell, "Belief in Kant," *Philosophical Review* 116 (2007): 323-360 and Andrew Chignell, "Kant's Concepts of Justification," *Noûs* 41 (2007): 33-63.

³ Timothy Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2000).

⁴ For discussion of the significance of defeater pairing, see also Mark Schroeder, "Stakes, Withholding, and Pragmatic Encroachment on Knowledge," *Philosophical Studies* 160 (2012): 265-285.

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have traditionally plagued similarly motivated analyses of knowledge: the *conditional fallacy* and the *defeater dialectic*.⁵

Daniel Whiting argues, in this journal, that I have overstated my case.⁶ More specifically, he argues that the Kantian Account founders on one of the most classic cases in the Gettierological literature, fake barns.⁷ In this paper I'll rehearse the problem of fake barns as faced by the Kantian Account. We'll see that this problem requires a certain view about the nature of basic perceptual reasons. Hence, I'll argue that by adopting an alternative account of basic perceptual reasons, the Kantian Account can evade Whiting's objection, and I'll argue that this alternative account is independently better motivated. The moral will be that though Whiting is right to press his objection to the treatment of fake barns in my earlier paper, the Kantian Account itself can escape unscathed.

1. Fake Barns

The problem with fake barn cases is supposed to be simple. In a classic fake barn case, the subject (call her Fran) is driving through an area full of barn façades, cleverly painted to be visually indistinguishable from real barns to drivers from the road. Mostly ignoring the scenery, and oblivious to the fact that she is in fake barn country, Fran looks up at the only real barn for miles around, visually identifies it as a barn, and forms the belief that it is a barn. The intuitive judgment about the case is supposed to be that though it may be rational for Fran to believe that it is a barn, she does not know this. The Kantian Account claims that she knows just in case the reasons for which she believes are both objectively and subjectively sufficient. And according to my take on the Kantian account, her

⁵ On the conditional fallacy and the defeater dialectic, see especially the comprehensive and authoritative treatment in Robert Shope, *The Analysis of Knowing: A Decade of Research* (Princeton: Princeton University Press, 1983) [1983], as cited approvingly by both Williamson, *Knowledge and Its Limits* and Jonathan Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge: Cambridge University Press, 2003). The account that perhaps best illustrates the virtues of Kantian Account while also illustrating the pitfalls of the conditional fallacy and the defeater dialectic can be found in Peter Klein, "A Proposed Definition of Propositional Knowledge," *The Journal of Philosophy* 68 (1971): 471-482. The Kantian Account aims to realize the virtues of Klein's account without falling into its mistakes of implementation.

⁶ Daniel Whiting, "Knowledge is *Not* Belief for Sufficient (Objective and Subjective) Reason," *Logos and Episteme* 6 (2015): 237-243.

⁷ See Alvin Goldman, "Discrimination and Perceptual Knowledge," *The Journal of Philosophy* 73 (1976): 771-791. Stew Cohen, Shyam Nair, and Errol Lord have also pressed versions of objection to my version of the Kantian Account in conversation, but I find Whiting's presentation particularly enlightening.

belief is doxastically rational just in case her reasons are subjectively sufficient. So given that the agent in the fake barn case believes rationally, the Kantian Account can deny that she knows only if it turns out that her reasons are not objectively sufficient. This is what Whiting denies. He argues that Fran's reasons for belief *are* objectively sufficient in the fake barn case.

What does it mean for reasons for belief to be objectively sufficient? It means, I claimed, that among the reasons for which you believe are some objective reasons, and that those objective reasons beat all comers: they are at least as weighty as any objective reasons for you not to believe. Having sufficient objective reasons for your belief entails that it is correct, but not conversely – there may be objective reasons that make your belief correct, but the reasons that you have do not suffice, by themselves. Sufficiency of objective reasons is paralleled by sufficiency of subjective reasons. A belief is rational just in case it is supported by sufficient subjective reasons – i.e., just in case the agent's subjective reasons for that belief beat all comers: they are at least as weighty as any of the agent's subjective reasons not to believe.

Suppose, in a subjective variant of the original fake barn case, that Stan, otherwise like Fran, believes that he is driving through fake barn country. Now he looks up, visually identifies the structure before him as a barn, and forms the belief, on that basis, that he is looking at a barn. The intuitive judgment about this case, I submit, is that his belief is not rational, and indeed that it is not a rational belief for him to form, in the absence of some further evidence that is independent of his visual identification. Since his belief is not rational, we may infer that the reasons for which he believes are not sufficient. Since in the absence of his belief that he is in fake barn country, they *would* be sufficient, we may infer that it is this belief that defeats his reasons. It is the contention of the Kantian account that in the same way as this *belief* defeats Stan's justification and hence his knowledge in the revised fake barn case by rendering his reasons subjectively insufficient, the *fact* that Fran really *is* in fake barn country defeats her knowledge in the original fake barn case, by rendering her reasons objectively insufficient. This is just the phenomenon of *defeater pairing*, which is one of the primary motivations for the Kantian Account, to begin with.

So how does the belief that he is in fake barn country defeat Stan's subjective reasons to believe that there is a barn in front of him? Because the Kantian account identifies sufficiency with the *balance* of reasons, it predicts that if the reason for which you believe is an objective reason at all, then its defeat must come in one of two varieties. When we change a situation in a way that makes a reason that would otherwise be sufficient into one that is insufficient,

either we must have added to the competing reasons, or we must have reduced the force of the reason itself. Similarly, if Jill ceases to be the loudest person in the room, it must either be because someone else has gotten louder or a new, louder person has entered the room, or because Jill herself has gotten quieter. If the defeat comes from a contrary reason, we call it *countervailing* defeat, and if it comes from a reduction in the weight of our original reason, we call it *undercutting* defeat. Sometimes a defeater can both undercut and countervail. If something looks blue to you but you are wearing color-inverting glasses, you both lose the reason that you would otherwise have to believe that you are looking at something blue, and gain a reason for the contrary conclusion, that you are looking at something orange.

So we know that the Kantian account must hold that the reasons for which Fran believes fail to be objectively sufficient. And we know that for that to be the case, it must be that they are not objective reasons at all (as happens with false lemmas), or they are undercut, or they are countervailed. In my earlier paper, I assumed without argument that fake barn cases were straightforward cases of undercutting defeat. But what, exactly, we say about them will depend a great deal on how we think about the nature of basic perceptual reasons.

2. Two False Starts

How we think about the defeat in the fake barn case is very sensitive, I believe, to a variety of issues about how we think about the nature of visual evidence. In this section I'll consider two views that are arguably inadequate to the case, and then in section 3 I'll spell out a new view, which I now prefer.

One of the striking features of the fake barn case is that barns are not among the elements that our visual systems are evolutionarily hard-wired to represent. The features that *are* so hard-wired, including edge detection, motion, color, and face and emotion recognition, are commonly referred to as *low-level* features of visual perception. In the philosophy of perception, it is contested whether perception is also properly understood as representing what are known, in contrast, as *high-level* properties, including things like categories like (perhaps) *barn*.⁸ But even those – so-called *high-levelists* – who maintain that we can have

⁸ On high-levelism, see especially Susanna Siegel, "Which Properties are Represented in Perception?" in *Perceptual Experience*, eds. Tamar Gendler and John Hawthorne, 481-503 (Oxford: Oxford University Press, 2006) and Susanna Siegel, *The Contents of Visual Experience* (Oxford: Oxford University Press, 2010), and for skepticism, see Jesse Prinz, "Siegel's Get Rich Quick Scheme," *Philosophical Studies* 163 (2013): 827-835. Heather Logue, "Visual Experience of Natural Kind Properties: Is There Any Fact of the Matter?" *Philosophical Studies* 162 (2013):

genuinely visual experiences as of something's being a barn – typically allow that these states epistemically depend on a learned background experience of what barns (for example) look like.⁹

So one natural idea about the classic fake barn case is simply to hold that in the fake barn case, when Fran bases her belief that there is a barn in front of her on her visual discrimination, she is also basing it, perhaps derivatively, on a background belief that turns out to be false when one is in fake barn country. On this treatment, Fran's reasons turn out to be objectively insufficient because of a fault in the background beliefs which facilitate her visual identification of the barn.

Unfortunately, though many of the most natural versions of fake barn cases may involve high-level properties, it is possible with some art to construct cases that are relevantly like fake barn cases but involve low level properties. For example, distance perception is heavily affected by cues that are altered in the thinner atmosphere at high elevations. This is what is responsible for the fact that distant peaks can appear very close when high in the mountains. If Ann, who normally lives in the city, is visiting the mountains, her visual discrimination of distances is unreliable in the same way as Fran's visual discrimination of barns, but the peak that she is now looking at may actually be as close as she judges it to be. This, I take it, is a low-level analogue of a fake barn case. So in what follows I will assume that there must be some more general solution, and will set aside issues about high-level contents.

According to a simple view of basic perceptual reasons – call it the *phenomenal* view – when you get visual evidence that there is a barn in front of you, your basic evidence is an *appearance* proposition – that it *looks like a barn*. I am not personally a fan of the phenomenal view,¹⁰ but in my earlier paper, I assumed it for the sake of simplifying discussion, and I used it to spell out my treatment of fake barn cases. I assumed that when Stan sees the barn, his visual evidence is that it looks like there is a barn in front of him, and that this is undercut by his belief that he is in fake barn country. Actually, I should also have said that it is also countervailed – together with the fact that it looks like there is a barn in front of him, the fact that most nearby things that look like barns are

1-12 is doubtful about whether the issue can be resolved, at least for the case of perception of natural kind properties.

⁹ For arguments in this vein, see especially Susanna Siegel, "Cognitive Penetrability and Perceptual Justification," *Nous* 46 (2012): 201-222 and Susanna Siegel, "The Epistemic Impact of the Etiology of Experience," *Philosophical Studies* 162 (2013): 697-722.

¹⁰ See Mark Schroeder, "Having Reasons," *Philosophical Studies* 139 (2008): 57-71.

really barn façades is evidence that there is *not* a barn in front of him. Whiting, I believe, does not mean to contest any of this in his paper. He simply holds that the analogy does not straightforwardly transfer over to the objective case, as I supposed.

The trouble, Whiting claims, is that as I agree, some defeaters can be defeated. If Stan were to believe not only that he is in fake barn country, but that he is in real barn state – a location within fake barn country where there are no façades – then he would be rational to believe that there really is a barn after all, and could know it. So Stan only lacks knowledge because he does not also believe this further defeater-defeater. In contrast, Whiting claims, in the objective case there is *always* a defeater-defeater for every defeater. So long as Fran is actually looking at a real barn, there will be some region including that barn but no façades, over which it is true that the only things that look like barns are actually barns. Were Stan to know that, his reasons would be subjectively sufficient, and hence since it *is* actually *true*, Fran's reasons must be objectively sufficient.

For some time I believed that there must be a flaw with Whiting's argument. I reasoned as follows: there must be some fact about the objective weight of Fran's reason, and it is clearly less weighty in the fake barn case than it would be if Fran were driving through a normal countryside free of barn façades. So, I reasoned, an adequate account of the weight of reasons should yield this result, and that is all that the Kantian Account needs. Whiting actually argues that my own earlier account of the weight of reasons¹¹ fails to predict this result, but so much the worse, I thought, for my earlier account of weight.

But this reasoning (mine, that is) trades on a mistake. There need not be any fact about the objective weight of Fran's reason, if it is not an objective reason at all. And recall that one of the ways in which it can turn out that the reason for which Fran believes is not objectively sufficient, is that it is not an objective reason at all. It turns out that precisely this treatment of fake barn cases is yielded by an alternative view about basic perceptual reasons that I have come to prefer for independent reasons.

3. The Apparent Factive Relation Account

The view about basic perceptual reasons that I now prefer says that when you have visual evidence as of there being a barn in front of you, your evidence is *that you see that there is a barn*. I call this the *apparent factive relation account*. Since this reason entails that there is a barn in front of her, the apparent factive relation

¹¹ My account of weight can be found in chapter seven of Mark Schroeder, *Slaves of the Passions* (Oxford: Oxford University Press, 2007).

account explains why Fran's visual evidence rationalizes believing that there is a barn in front of her. But on all accounts, since Fran is in fake barn country, she does not actually count as seeing that there is a barn in front of her. So her subjective reason is not true, and hence is not an objective reason at all. Basing her belief on her perceptual evidence, in this case, according to this view, is exactly like basing a belief on a false lemma. On this view, since the problem with Fran's subjective reasons is that they fail to be objective reasons altogether, rather than that they are defeated, there is no possibility that they can be reinstated by defeater-defeaters. So the apparent factive relation account gets the Kantian Account out of trouble with fake barn cases.

You might worry that this account offloads some of the features that we want from an analysis of knowledge onto closely related facts about factive perceptual verbs like 'sees that.' The worry is that fake barn cases have always been assumed to be a problem for the analysis of knowledge, but my solution requires assuming that we have a separate account of *seeing that* which deals with fake barn cases, so it only puts off the problem, rather than solving it. Worse, according to Williamson,¹² knowledge is the most general factive stative attitude, and hence seeing that something is the case is just a *species* of knowing that it is the case. On Williamson's account the reason *why* Fran does not count as seeing that there is a barn in front of her is that seeing that entails knowing it, and knowledge requires safety. So if we accept Williamson's thesis that knowledge is the most general factive stative attitude, then we will think that the Kantian Account can use this strategy in order to accommodate fake barn cases only by offloading the analysis of one of the special cases of knowledge.

I think, however, that we should reject Williamson's idea that knowledge is the most general factive stative attitude, at least on the assumption (which was required for this objection and Williamson himself accepts) that *seeing that* is a factive stative attitude. Together, these ideas causes a problem for the solution that I am suggesting here only because they entail that seeing that P entails knowing that P. But this entailment is highly doubtful. Since knowing that P entails believing that P (as Williamson himself allows to be true), it follows that seeing that P entails believing that P. But it seems perfectly coherent to me to imagine someone who sees that P without believing that P. The proverb, "seeing is believing," after all, means not that seeing is sufficient for belief, but rather that seeing for yourself is sometimes *required* for belief. It is easy for seeing to come apart from believing, in fact, because in general, visual experience represents far more things than are ever taken up as beliefs. You might, for example, pass a

¹² Williamson, *Knowledge and Its Limits*, chapter 1.

classroom on your way to the restroom while thinking about a puzzle of Kant interpretation. You see that the lights are on in the classroom, but you don't form a belief that they are.

In this case, though you don't believe that the lights are on in the classroom and hence don't know that they are on, you are still in a *position* to know that they are, and so if these were the only counterexamples to *sees entails knows*, then it might still be true of a kind of hyper-idealized version of ourselves. But other counterexamples show, I believe, that you can see that something is the case without even being in a position to know that it is the case. All that we need to construct such cases is that it is rational for you to doubt the deliverances of your visual experiences. And we've already been considering such a case, that of Stan, who is driving through a perfectly ordinary, barn-studded, countryside, but *believes* that he is in fake barn country. Stan sees that there is barn in front of him, but because he believes that he is in fake barn country, he doubts the deliverances of his senses, and suspects that it is probably just a façade. So seeing does not even entail the possibility of rationally believing, and hence seeing does not entail even being in a position to know.

I conclude from this reasoning that the problem of explaining why the kinds of failures of safety that are manifested by fake barn cases result in failures of seeing that is independent of the analysis of knowledge. So it is no mistake to delegate those problems to where they belong – in the proper treatment of what it is to see that something is the case.

But why think that visual perceptual evidence is always of the form, "I see that P"? It's my view that the reasons to prefer the factive relation account of basic perceptual reasons are strong, but complex, and in my earlier paper defending the Kantian Account, I had hoped to avoid them. Some of the chief advantages of this account over the phenomenal account are familiar from treatments by John McDowell and Timothy Williamson.¹³ The phenomenal account, as Williamson observes, is what is responsible for raising the specter of skeptical hypotheses, by creating a great distance between perceptual evidence and the perceptual beliefs that that evidence is supposed to justify. And any attempt to close that gap, as McDowell argues, leads us into ungrounded circles. In contrast, the view that basic visual evidence takes the form, "I see that P," has the virtue of being *world-implicating*. You see that P only if P, and hence there are no skeptical scenarios for P that are consistent with all of your evidence.

¹³ John McDowell, *Mind and World* (Oxford: Oxford University Press, 1994), Williamson, *Knowledge and Its Limits*.

Of course, this view of evidence is not the only one on which it is world-implicating. I used to think, for example, that when you have a visual experience *as of* P (which could be either veridical or otherwise), you come to have the proposition that P as among your reasons to believe that P.¹⁴ This view shares the world-implicating features of the factive-attitude view, and so it offers the same response to skepticism. But it runs into trouble with defeaters. If your visual evidence that there is something red in front of you is just *that there is something red in front of you*, this is *such* good evidence that there is something red in front of you that it is hard to see how it could be defeated by learning that you are wearing rose-colored glasses.¹⁵ Worse, you could have both tactile and visual evidence that there is something square in front of you, but only one of these should be defeated if you learn that your right arm has been amputated and you are experiencing phantom limb sensations. But if both sources gave you the same reason – *that there is something square in front of you* – then it is hard to see how one could be defeated but not the other.¹⁶

In contrast, the apparent factive relation account yields just the right treatment of these cases. Learning that you are wearing rose-colored glasses is evidence that despite appearances, you are not really seeing that there is something red in front of you, after all. And learning that your arm has been amputated is evidence that you are not feeling something square in front of you, without being evidence that you are not seeing that there is something red in front of you. So of the world-implicating accounts of perceptual evidence, the apparent factive relation account is preferable.

I once worried about the apparent factive relation account as follows.¹⁷ In general, nothing is your subjective reason unless you bear the right cognitive *possession* relation to that proposition. Since being true is not a cognitive possession relation, I worried that in order for the proposition that you see that P to be your reason, you would first have to believe, or bear some other positive psychological relation, to the content that you see that P. In contrast, in order for the proposition that P to be your reason, you would only need to have a visual experience as of P, which is less demanding.

¹⁴ Schroeder, "Having Reasons," and Mark Schroeder, "What Does it Take to 'Have' a Reason?" in *Reasons for Belief*, eds. Andrew Reisner and Asbjørn Steglich-Peterson (Cambridge: Cambridge University Press, 2011), 201-222.

¹⁵ For appreciating the force of this problem, I am indebted to Scott Sturgeon. Ryan Walsh also made this point, in the form in which it is presented here, independently in my graduate seminar in spring 2012.

¹⁶ Thanks to Shyam Nair for pressing this worry forcefully.

¹⁷ Schroeder, "Having Reasons."

In contrast, however, I now think that the extra demandingness of the apparent factive relation account is plausibly just right. There are multiple layers of perceptual representation in the visual, auditory, and sensorimotor cortex. On a plausible view, some of those layers of representation are not consciously available at all, but only play a role in processing of visual information in order to feed forward to successive layers that are consciously available. Some striking evidence for this comes from a wide variety of experiments that show how senses are affected by information available from other sensory modalities. In one of the most striking such experiments, experimental subjects are outfitted with a device known as a pseudophone that routes sound from the left side of their body to their right ear, and from the right side of their body to their left ear.¹⁸ When seated blindfolded with a woman to their left and a man to their right, subjects hear the woman as on their right and the man as on their left. But when the blindfold is removed, subjects promptly hear the woman as on their left and the man as on their right, exhibiting a powerful switch in how things sound to the subject on the basis of a change in visual information alone.¹⁹

What appears to be happening in cases like this one is that information from vision is incorporated at higher levels of auditory processing. One thing experiments like this appear to show is that the representational information encoded in lower levels of auditory processing – which *do* represent the woman's voice as coming from the subject's right – are not directly available to consciousness.²⁰ The contents of such below-consciousness forms of perceptual

¹⁸ See P.T. Young, "Localization with Accoustical Transposition of the Ears," *Journal of Experimental Psychology* 11 (1928): 399-429.

¹⁹ It is not strictly accurate to say that the subject has only visual information about location in this experiment, because some sound reaches the ears through the head rather than through the pinnae of the ears. But the *change* in perceived location is due only to the *change* in visual information.

²⁰ For the point that I'm making here, nothing actually turns on the fact that this case involves inter-modal interactions. Similar points can be made, I believe, with a single perceptual modality, in at least some cases where cues from different sources work together to shape perception of some property or relation. For example, in the moon illusion, the visual angle subtended by the moon appears to be larger when appearing near the horizon than when appearing high overhead. The exact explanation of the moon illusion is a matter of great controversy, but most promising explanations appeal to the fact that visual angle is related to perceived size, and consciously perceived size is also related to perceived distance. For example, according to one simple explanation, the illusion arises because occlusion is one of the visual clues to distance. So when the moon appears closer to the horizon, it is more obviously behind distant objects like buildings and trees, which triggers a perception of it as larger. But given the general relationship between size and visual angle, this leads it to appear to subtend a larger

representation are not, I believe, plausibly available as reasons. They only become reasons when the experience is conscious.

But in conscious experience, I believe, contents about the world are never presented unadorned. When you have a visual experience as of a barn in front of you, what is happening is that it seems to you that you are *seeing* a barn.²¹ That is just what it is for the experience to be a visual one – that it is an experience as of *seeing*. Similarly, auditory experiences are experiences as of *hearing*. That is why in the experiment that I've described, the subject counts as having an auditory experience as of the woman being on her left, even though the sole source of perceptual information that the woman is on the left actually comes from vision. Since perceptual experiences are all experiences as of seeing (or hearing, or feeling, or smelling), it turns out that there is no extra demandingness, after all, associated with the apparent factive relation view.²²

visual angle. Because we know that visual angle needs to be represented at low levels of visual processing, accounts on which the moon illusion is at least in part due to clues about distance suggest that the low level at which representation of visual angle is represented is not directly consciously available, and our conscious perceptions of visual angle are actually shaped by our perceptions of objective size. For more on the moon illusion, see Helen Ross and Cornelius Plug, *The Mystery of the Moon Illusion: Exploring Size Perception* (Oxford: Oxford University Press, 2002).

²¹ Compare John Searle, *Intentionality: An Essay in the Philosophy of Mind* (Cambridge: Cambridge University Press, 1983). Searle argues that visual experiences represent themselves as being caused by their objects, on the grounds that this is the condition of their veridicality. But in some cases of veridical hallucination, an object can be what causes a hallucination of itself. In such cases, the contents that Searle assigns to visual experiences are true, but the experiences are not veridical. So an improved version of Searle's view would hold that the visual experience as of P represents itself as being a *seeing that P*. Since this is false even in the case of veridical hallucinations that are caused by their objects, it better fits with Searle's motivations. But this is just the sort of account that is required by the apparent factive relation view.

²² I also believe that it is possible to give a more ecumenical interpretation of the apparent factive relation account. Disjunctivism about perception is the view that the only thing that seeing that there is something red in front of you and having a perceptual illusion as of something red in front of you have in common, is that both are subjectively indistinguishable from seeing that there is something red in front of you. Non-disjunctivists agree that this is something that both states have in common, though they deny that this is the only thing. But then 'appearing,' in the apparent factive relation account, can be interpreted to mean 'is in a state that is subjectively indiscriminable from,' and anyone who accepts that veridical experiences and hallucinations have this in common accepts the psychological commitments that are required in order to make good on the apparent factive relation account, making this a highly ecumenical interpretation of the view.

Mark Schroeder

4. Conclusion

A proponent of the Kantian Account who endorses the factive attitude view about the contents of basic perceptual reasons has no trouble, I believe, with fake barn cases. This treatment is better, I believe, than the one in terms of objective undercutting, for all of the reasons that Whiting articulates in his article. The commitments that it requires are two: the view that *seeing that* fails in fake barn cases, but not because it is a special case of knowledge, and the view about basic perceptual reasons that I've called the factive relations view. I've argued that each of these commitments is independently well-motivated. Though there is still much more to be said about each, I do think this shows that the Kantian Account is not dead in the water.²³

²³ Special thanks to Daniel Whiting, Shyam Nair, Ben Lennertz, Janet Levin, Ryan Walsh, Stew Cohen, and Juan Comesaña.

NOTES ON THE CONTRIBUTORS

Davide Fassio is a Postdoctoral Research Fellow in Philosophy at the University of Geneva. His main research interests are in epistemology and philosophy of normativity, but he is also interested in philosophy of mind, ethics and modal logics. He has several articles published or forthcoming in peer-reviewed journals such as *Inquiry*, *Acta Analytica*, *Theoria* and *Logique et Analyse*. Contact: Davide.Fassio@unige.ch.

Martin Grajner is currently an assistant professor in the Department of Philosophy at Dresden University of Technology. His research interests are in epistemology and metaphysics. He has written one book *Intuitionen und apriorische Rechtfertigung* (Paderborn, 2011) and several articles that appeared in journals such as *Zeitschrift für philosophische Forschung* and *Philosophical Studies*. He is currently working on a book about the notion of grounding. Contact: martin.grajner@tu-dresden.de.

Tristan Haze is a late-stage PhD candidate at the University of Sydney. His thesis, *Necessity and Propositions*, will put forward a new account of the conditions under which a proposition is necessarily true, supported by a new approach to numerous issues in the philosophy of language. He blogs at *Sprachlogik*, and is organizer of the Philosophers' Carnival project (founded in 2004 by Richard Chappell). He recently published "A Problem for Hofweber's Ontological Project" in *Philosophia*. He also practises music and comedy. Contact: tristanhaze@gmail.com.

Arturs Logins is a visiting postdoc at the Humboldt University of Berlin and a Swiss National Science Foundation "Early Postdoc.Mobility" fellow. His research interests are in epistemology (evidence, epistemic norms, evidential probability) and history of philosophy (Early Modern epistemology). His recent publications include: "The problem of massive deception for justification norms of action" (*Acta Analytica*, 2014), "On Williamson's account of propositional evidence" (*Logique & Analyse*, 2013), and "Scepticisme, fidéisme et évidentialisme : oppositions et origins" (*Dialogue*, 2012). Contact: arturslog@gmail.com.

Adrian Ludușan is a postdoctoral fellow (SOP HRD/159/1.5/S/133675 Project) of the Romanian Academy, Iași Branch. He holds a PhD in Philosophy from Babeș-Bolyai University in Cluj-Napoca, Romania (2013). His main research interests include model theory, set theory, proof theory, philosophy of mathematics, philosophy of logic, and philosophy of language. Contact: adiludusan@gmail.com.

Kevin McCain is Assistant Professor of Philosophy at the University of Alabama at Birmingham. His primary areas of research are epistemology and philosophy of science. He is the author of two books – *Evidentialism and Epistemic Justification* (Routledge, 2014) and *The Nature of Scientific Knowledge* (Springer, Forthcoming). He is currently co-editing, with Ted Poston, *Best Explanations: New Essays on Inference to the Best Explanation* (Oxford University Press, Forthcoming). Contact: mccain@uab.edu.

Mark Schroeder is Professor of Philosophy at the University of Southern California. He works widely on topics connected with epistemology, metaethics, normative ethics, and the philosophy of language, and is the author of *Slaves of the Passions* (Oxford University Press, 2007), *Being For: Evaluating the Semantic Program of Expressivism* (Oxford University Press, 2008), *Noncognitivism in Ethics* (Routledge, 2010), *Explaining the Reasons We Share* (Oxford University Press, 2014), and *Expressing Our Attitudes* (Oxford University Press, 2015). He is currently at work on a book, *Reasons First*, defending, inter alia, the Kantian Account of knowledge and the apparent factive relation account of basic perceptual evidence. Contact: maschroe@usc.edu.

James Van Cleve is Professor of Philosophy at the University of Southern California. He is the author of *Problems from Kant* (Oxford University Press, 1999), *Problems from Reid* (Oxford University Press, 2015), and over fifty articles in epistemology and metaphysics. Contact: vancleve@usc.edu.

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Bd. Republicii Nr. 45, B Onești, 601129 BC

Tel. 0234 319 810 Fax 0234 306 079

office@mgp.ro www.mgp.ro

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