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ARTICLES

EPISTEMIC DEONTOLOGISM AND ROLE-UGHTS

Jon ALTSCHUL

ABSTRACT: William Alston's argument against epistemological deontology rests upon two key premises: first, that we lack a suitable amount of voluntary control with respect to our beliefs, and, second, the principle that "ought" implies "can." While several responses to Alston have concerned rejecting either of these two premises, I argue that even on the assumption that both premises are true, there is room to be made for deontology in epistemology. I begin by offering a criticism of Richard Feldman's invaluable work on 'role-oughts,' whereupon I develop my own positive view in light of Feldman's shortcomings. The upshot is that while we as epistemic agents are not responsible for the beliefs we form, we are nonetheless responsible for the various bodily or mental activities that typically bear a causal influence on belief formation.

KEYWORDS: justification, doxastic voluntarism, role-oughts, epistemic responsibility

1. Introduction

Most of us think that there are various things that we as moral agents ought to do, like picking up your litter off the ground or calling a close friend when she needs a shoulder to lean on. When we fail to do the things we ought to do, or conversely we do the things we ought not to do, we are rendered morally accountable for how we acted, and blame may be in order. It is less clear, however, whether a similar mode of assessment can be applied, not to the actions we perform when interacting with the world, but to the beliefs we form in light of our epistemic situations. Is it true that there are certain beliefs we as epistemic agents ought to hold, and moreover does failing to believe as we ought (or believing as we ought not) leave us epistemically responsible for our doxastic states?

Those who answer this question in the affirmative tend to conceive of epistemic justification in what William Alston calls a "deontological" way, as having to do with obligation, permission, requirement, blame, and the like.¹ This way of thinking about justification would be especially appealing to the philosopher who holds that at the crux of the concept of justification is the idea of being receptive to the reasons one has and using them to shape one's doxastic

¹ William Alston, "The Deontological Conception of Epistemic Justification," in his *Epistemic Justification: Essays in the Theory of Knowledge* (Ithaca: Cornell University Press, 1989), 115.

livelihood. Justification, understood deontologically, is the mark of an *achievement* on the agent's part – to believe as one ought implies that the agent has fared well or has done a good job in the face of her epistemic situation. This is a feature that has traditionally been underemphasized or omitted altogether by various reliabilist or other externalist theories. If what matters most about justification to an externalist is that there be in place some suitable connection between the agent and the world, then the very idea of what the *agent* is responsible for seems to go out the window.² We wish not to surrender either of these highly plausible features about justification: 1) justification places various standards upon the epistemic sturdiness of the specific belief formed – that is, its connection to truth, but 2) it also places various demands on *how* the agent should arrive at the belief. Given the strength of an agent's evidence and cognitive faculties, there are various things that *she*, in that moment, is *supposed to do*.³

There is an important and much discussed problem for this deontological way of thinking about justification, which comes from Alston in an oft-quoted passage on the subject:

Now this conception of epistemic justification is viable only if beliefs are sufficiently under voluntary control to render such concepts as *requirement*, *permission*, *obligation*, *reproach*, and *blame* applicable to them. By the time-honored principle that 'Ought implies can,' one can be obliged to do A only if one has an effective choice as to whether to do A.⁴

Belief seems not to be under the influence of the will in the same way as are our ordinary actions, like wiggling a toe or paying the rent. Borrowing Alston's own example, when I see a car coming down the street, I am suddenly struck with the belief that there is a car on the street. There is no real sense in which forming

² See Laurence Bonjour, *The Structure of Empirical Knowledge* (Cambridge, MA: Harvard University Press, 1985) for a classic objection to externalism on this score. For some emended versions of reliabilism that purport to avoid this objection, see Alvin Goldman, *Epistemology and Cognition* (Cambridge, MA: Harvard University Press, 1986) and John Greco, *Putting Skeptics in Their Place* (Cambridge: Cambridge University Press, 2000).

³ The targets of Alston's original argument were those philosophers who sought to *analyze* the concept of justification from an entirely deontological point of view (e.g. Carl Ginet, *Knowledge, Perception, and Memory* (Dordrecht: D. Reidel, 1975) and Roderick Chisholm, *Theory of Knowledge*, 2nd Edition (Englewood Cliffs, NJ: Prentice-Hall, 1977)). I wish not to defend this very strong version of deontologism. Instead, all I am interested in investigating is whether there exists a deontological dimension or feature to the concept of justification, leaving it open whether there are other features relevant to satisfying this concept. Note however that Alston's argument, if successful, would defeat even this weaker form of deontologism.

⁴ Alston, "The Deontological Conception," 118.

this belief was done out of my own willing or choosing. As others have pointed out along with Alston, we are simply at the mercy of our evidence and reasons when arriving at a doxastic position.⁵ For this reason, it is hard to see how deontological concepts could have any application in epistemology.

The purpose of this paper is to vindicate epistemic deontology in the face of Alston's *argument from doxastic involuntarism*. Other recent attempts to respond to the argument have commonly challenged either of Alston's two key premises: the claim that we lack a suitable amount of voluntary doxastic control and the principle that "ought" implies "can." Unlike these responses, I do not wish to challenge Alston's assumptions in this argument. I believe they are both correct, but I shall not argue for this in this paper. I am instead interested in answering whether deontology can have any place in epistemology in light of the truth of such assumptions. Ultimately I will claim the answer is "yes," and I will do so primarily by presenting a criticism of Richard Feldman's invaluable work on role-oughts – according to which there are duties and obligations that get assigned to agents solely in virtue of occupying some role – which he has presented as a way of answering Alston's argument. While, as I will argue, Feldman's answer to Alston's argument ultimately fails, his approach provides important insights to what the nature of our epistemic obligations are. Specifically I will argue, mirroring a position from John Heil,⁶ that while we are not responsible for the beliefs we form, we are responsible for the bodily and mental actions we take that cause us to form our beliefs. These actions are ones over which we typically do have voluntary control and moreover are the sorts of actions that are characteristic of responsible epistemic agency.

2. Role-Oughts and the "Ought implies Can" Principle

Alston's argument claims that having a suitable amount of voluntary control is a necessary condition for attributing a deontological judgment toward one's belief. There are two central strategies for responding to Alston's premise. The first is to accept his premise as true but hold that we do possess the requisite form of control

⁵ John Heil, "Doxastic Agency," *Philosophical Studies* 43 (1983): 357, Richard Feldman, "Voluntary Belief and Epistemic Evaluation," in *Knowledge, Truth, and Duty*, ed. M. Steup (Oxford: Oxford University Press, 2001), 83, Nikolaj Nottelmann, "The Analogy Argument for Doxastic Voluntarism," *Philosophical Studies* 131 (2006): 560-61.

⁶ Heil, "Doxastic Agency."

with respect to our beliefs.⁷ The second strategy concedes to Alston that we lack such control but denies that it is necessary for deontological assessment.

For our purposes, we will investigate the latter strategy only, and we will start with one its chief proponents, Richard Feldman.⁸ According to Feldman, the first strategy will not succeed because the kind of control necessary to satisfy Alston's premise is what Feldman calls *response control*. One has response control with respect to Φ ing when "one has the ability to use practical reason to respond directly to incentives and the like."⁹ With our more ordinary actions, we typically do have such control. Suppose you ask me to pass the salad dressing to you across the table. Here the fact that you are in some need and I wish to be a good friend is a practical reason I now have for performing this action. And I can right now in that very moment, directly on the basis of this reason, either pass the dressing over to you or do something else, like say "No" or agree but only if you pass me the roles. In contrast, if instead of passing the dressing, you asked me to believe right now that Oprah is the Canadian Prime Minister, this is something I cannot do. You might even offer me some kind of monetary reward for complying, yet no matter how big the incentive may be, there is nothing I can do at this moment directly on the basis of that incentive to form the requested belief. It is not a matter of how much I want you to offer me; rather, it is a matter of what I am and am not able to do at this moment.

If we lack response control with respect to our typical beliefs, does it follow that there is no basis to epistemically evaluate such beliefs from a deontological standpoint? Not at all, says Feldman. Instead, he thinks we can provide such evaluations with regards to how well the belief formed is a proper response to the information presented to the agent at the time. Consider the deontological term,

⁷ For defenders of this first strategy, see Matthias Steup, "Doxastic Voluntarism and Epistemic Deontology," *Acta Analytica* 15 (2000) and "Doxastic Freedom," *Synthese* 161 (2008), Sharon Ryan, "Doxastic Compatibilism and the Ethics of Belief," *Philosophical Studies* 114 (2003).

⁸ Richard Feldman, "Voluntary Belief and Epistemic Evaluation," and "Modest Deontologism," *Synthese* 161 (2008). For other defenders of this second strategy, see Jonathan Adler, *Belief's Own Ethics* (Cambridge: MIT Press, 2002), Philippe Chuard and Nicholas Southwood, "Epistemic Norms without Voluntary Control," *Nous* 43 (2009), and Conor McHugh, "Epistemic Deontology and Voluntariness," *Erkenntnis* 77 (2012).

⁹ Feldman, "Modest Deontologism," 347. Feldman's notion of response control mirrors the kind of voluntary control espoused by Jonathan Bennett, "Why is Belief Involuntary?" *Analysis* 50 (1990), who conceives of voluntary control as being responsive to practical reasons. See Pamela Hieronymi, "Controlling Attitudes," *Pacific Philosophical Quarterly* 87 (2006) for a discussion of Bennett and also her own notion of what she calls managerial control. For an understanding of voluntary control similar to the one being described by Feldman, see McHugh, "Epistemic Deontology and Voluntariness."

“ought.” It is reasonable that if any deontological terms are applicable to belief, we should expect at a minimum that statements of the form,

(OUG) You ought to believe that p,

can be, and oftentimes are, true.¹⁰ Feldman claims that OUG-statements can be true, and thus there is room to be made for at least a modest version of epistemic deontology.¹¹ His argument runs as follows: OUG is equivalent to:

(RES) Believing that p is the epistemically appropriate response to S’s evidence.

Since RES-statements can be true, says Feldman, the same goes for OUG-statements. Suppose your current evidence consists of a visual experience of a computer screen ahead. Assuming you have no reason to think you have taken some mind-altering drug or are looking at a hologram, believing that there is a computer screen ahead is the appropriate response to the evidence you possess. Thus, the relevant RES-statement is true in this case. But if forming this belief in response to the evidence in this situation is the one that is appropriate, then it must be true that you ought to believe that there is a computer screen ahead.

The merits of Feldman’s argument is that we find a way to make room for at least some kind of deontological assessment of agents’ beliefs, at least with respect to what they ought or ought not to believe.¹² Also on Feldman’s account, the precise sort of deontological assessment the agent receives is completely divorced

¹⁰ To elaborate I will assume for this paper that whenever it is true that S is obligated, required, or has a duty to believe that p, then it will also true that S ought to believe that p; and also whenever it is true that S is permitted or cannot be blamed for believing that p, then it will not be the case S ought not to believe that p. Thus, it will turn out that no deontological statements about one’s belief can be true unless there is some corresponding ought-statement that is also true.

¹¹ There is one sense in which OUG-statements clearly are true, as when one makes a claim about the normal behavior or expectation of the discussed agent (see Nicholas Wolterstorff, “Obligations of Belief: Two Concepts,” in *The Philosophy of Roderick Chisholm*, ed. E. H. Lewis (LaSalle, IL: Open Court, 1997)). Knowing that their child is afraid of her room in the dark, one parent might correctly say to the other ten minutes after putting the child to bed, “She ought to be thinking there are monsters in her closet by now.” The relevant ‘ought’ here does not, nor is it meant to, describe whether the child would be in a good epistemic situation by forming this belief, but only whether this is the doxastic state the parents would expect the child to be in at a certain point. Thus we would not want epistemic deontology to rest solely on this separate class of ought-statements. I will henceforward disregard this separate class for our discussion.

¹² Feldman’s deontology is called *modest* in the sense that he thinks a minimal number of deontological concepts may be applied to belief – specifically the concept ‘ought’ and ‘ought not’ – without being thereby committed to the applicability of other deontological concepts, like ‘duty,’ ‘permission,’ or ‘requirement.’ See Feldman, “Modest Deontology,” 348.

from the question of whether the agent exercised response control with respect to her belief. We can assume that once you look at the computer screen before you, you are, in a sense, “locked” into forming that corresponding belief. There is nothing you can do at this moment to believe otherwise, no matter how much of an incentive I may offer you. Nevertheless, says Feldman, there does exist a proposition which, given your evidence, is the one that you truly *ought* to believe.

Despite these merits, I will argue that Feldman’s argument fails. For, there are plenty of real life situations in which despite the fact that believing *p* would be the appropriate response to the agent’s evidence, the agent is simply unable to believe it. Perhaps a mother whose son has been missing for weeks has been told by the competent lead detective that the son was found dead, yet her overwhelming hope that he remains alive makes it psychologically impossible for her to accept what the evidence actually supports. If OUG were equivalent to RES, then it would follow that there are some propositions one ought to believe but which one cannot; yet this would stand in violation of “that time-honored principle that ‘ought’ implies ‘can.’”¹³

Feldman is unbothered by this objection because he rejects the “ought implies can” principle outright.¹⁴ He does so by introducing the notion of ‘role-oughts,’ according to which “[t]here are oughts that result from one’s playing a certain role or having a certain position.”¹⁵ As an apartment renter, I *ought* to pay the rent by the first of the month; this is something that I am obligated to do. Surely I do have the relevant kind of control over whether I fulfill or violate this obligation (it is within my power to purchase a brand new television instead of mailing in the rent check); but the fact that I have such control seems not to be the only, or even the primary, factor as to whether such an obligation to pay the rent exists. For, even if I were unable to pay the rent in a given month (say, I was fired from my job, and I now have insufficient funds), this seems not to undermine the fact that I still ought to pay the rent. My obligation to pay the rent is binding whether or not it is within my control to pay. According to Feldman, the source of the obligation – the fact that I ought to make this payment – rests on the fact that I have taken on the role of a renter.

¹³ Alston, “The Deontological Conception,” 118.

¹⁴ Others who have rejected this principle include Michael Stocker, “‘Ought’ and ‘Can,’” *Australasian Journal of Philosophy* 49 (1971), Walter Sinnott-Armstrong, “‘Ought’ Conversationally Implies ‘Can,’” *Philosophical Review* 93 (1984), and Ryan, “Doxastic Compatibilism.” Chuard and Southwood (“Epistemic Norms without Voluntary Control”), rather than claiming that “ought implies can” is false, argue that it cannot be used effectively to reject epistemic deontologism.

¹⁵ Feldman, “Voluntary Belief,” 87.

If we could extend this notion of a role-ought to the case of occupying the role of a believer, then the question of whether OUG can be true would seem to not depend on whether forming that belief is something the agent can or cannot do. However, this strategy will not work. For, it is evident that there is a substantial disanalogy between taking on the role of a renter and taking on the role of a believer. In the former case, the obligation is contractual. Even if we allow that my obligation to pay the rent is explained by the fact that I am a renter, it is clear that it was of my own choosing to take on this role. I agreed to become a renter when I signed the landlord's lease.¹⁶ I brought this obligation on myself. Furthermore, had I been forced beyond my will to sign the contract (due, say, to some compelling coercive power) it is not so obvious that I would still be obligated to pay the rent. At the very least I could give a good argument to the judge as to why I felt I did not owe the landlord any money. But, in the case of the role of a believer, no such contract was ever presented. Indeed, it is not even possible for any sort of contract to be presented prior to one's agreeing to become a believer. Agreeing to a contract of any form requires that *one already have certain beliefs* about what the contract says and what one has to do in order to agree. We are believers, a fact over which we have no choice at all.

Feldman is aware of this disanalogy, and his answer is to present other examples of roles, occupations of which generate obligations, that more closely align with our occupying the roles of believers. He says:

Teachers ought to explain things clearly. Parents ought to take care of their kids. Cyclists ought to move in various ways. Incompetent teachers, incapable parents, and untrained cyclists may be unable to do what they ought to do.¹⁷

If a parent, for example, is so overcome by her alcoholism that she is unable to take care of her kids, that seems not to take anything away from its being the case that she ought to be doing this. In response to this suggestion, it is apparent to me that the roles Feldman mentions in the above passage are still roles that people choose to occupy. Teachers choose to enter the profession, a couple chooses to have a child, and even cyclists make that initial decision to start riding a bike. That being the case, there is no reason here to suppose that the obligations associated with these roles are not contractual in nature. Consider a similar question to the one regarding a renter forced into signing a lease. If one had no choice over whether to occupy one of these roles, would the obligation associated with that role still exist? When a woman becomes a mother as the result of a rape,

¹⁶ See Richard Feldman ("Epistemic Obligations," *Philosophical Perspectives* 2 (1988)) for a discussion of contractual obligations.

¹⁷ Feldman, "Voluntary Belief," 87-88.

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and she has no inclination or desire to be a parent, is it still the case that she ought to take care of her kids? As with the coerced renter, it is not so *obvious* that the victimized mother remains under an obligation, given that her occupation of this role was forced upon her. Given that the obligations associated with being a believer are in no way contractual, and could not possibly be, I think we should agree that such obligations must be disassociated from Feldman's notion of role-oughts.

However, since his initial discussion, Feldman has given us a response to this newer objection:

One can argue that one can only have role oughts with respect to voluntarily adopted roles. I do not see why this is true. There are ways one ought to eat – chew before swallowing – but the role of eater is not a role one took on voluntarily. There are ways one ought to breathe, even if this is not a voluntarily adopted role.¹⁸

Feldman is correct that being an eater and being a breather are roles that, like being a believer, no one adopted voluntarily; and in this respect they serve as better analogies than the ones discussed above. But we face a different sort of disanalogy here. Insofar as Feldman is granting that: 1) taking on the role of a believer is involuntary and 2) we have no control (response control) over whether to believe, say, that *p*, then we should expect the right kind of analogy to be one where not only is the adoption of the role involuntary, but also *that the activities associated with that specific role are ones over which we have no control either*. So, while it is true that we lack control over whether to *be* eaters or breathers in the first place, as with being a believer, we nonetheless typically display a considerable amount of control over *how* we execute our tasks in these roles. Granted, we do commonly eat and breathe with hardly any conscious attention to these activities as we do them. But regardless of how little or much I may concentrate on my own chewing habits as I eat, at any given moment whether I chew on my food more or I cease chewing and swallow is something completely up to me – as much as is wiggling my big toe. Consider a friend who offers you \$10 to stop chewing on your steak now and swallow that bite whole. It may give you a considerable stomachache to comply, but surely it is up to you to either accept or reject the offer. That being the case, Feldman is ill-advised to use these sorts of roles to establish the falsity of the “ought implies can” principle. Let me elaborate.

What are we to say about the individual who, due to some rare abnormality, never developed any teeth and is all gums from ear to ear? When a

¹⁸ Feldman, “Modest Deontology,” 351.

plate of filet mignon is placed in front of (let us call him) Toothless Mortimer at a wedding reception, we may ask, “As an eater, what ought Mortimer to do?” Is it true of Mortimer that he ought to chew his food? I do not see how Feldman can say otherwise. Given that Mortimer has taken on the role of someone who eats, that one who eats ought to do so properly, and that proper eating involves chewing before swallowing, it seems that Toothless Mortimer ought to chew his food. But, surely this is an odd result. As Mortimer looks down at his steak and asks, “What I am supposed to do here?” consider how insulting and demeaning it would be for another diner at the table to tell him to start chewing his food.

If I am right that it is false that Toothless Mortimer ought to chew his food first, this shows that Feldman’s eating example fails to demonstrate situations in which one ought to do something that one cannot. Of course, Feldman might respond by suggesting that when he said “[t]here are ways one ought to eat,” he was speaking more broadly than I have been presuming with the above example. The idea would be that, in general, people ought to chew before they swallow, but also that this rule is not meant to apply across the board. Perhaps Feldman would allow for exceptions, as might be the case with Toothless Mortimer. Given that he has no teeth, of course it would be silly to say that he ought to chew. Fair enough, but the question then becomes: *why* do we allow exceptions for people like Toothless Mortimer but not for other people? It seems the only answer available here is that Toothless Mortimer, given that he has no teeth, is simply *not able* to chew his food. That is to say, he cannot chew his food. But if we let this explain why exceptions to this norm are allowed, what this boils down to is that it is not the case that Toothless Mortimer ought to chew his food, *for the reason that he cannot*. In other words, it would be the “ought implies can” principle explaining why Toothless Mortimer is relieved of his obligation. But this was the very principle Feldman was attempting to reject. Hence, this response will not succeed.

To generalize the above point, when considering the statement, “S ought to ϕ in virtue of occupying role R,” I find it highly implausible that a statement of such a form will hold in all situations without exception to all those who take on the role of R. Even if we were to try to craft the relevant ϕ associated with the role of eating such that even subjects like Toothless Mortimer would now fall under the relevant obligation (e.g. “eaters ought to eat with attention and not spill any food from their mouths”), there are some eaters out there who would still be relieved of the associated obligations. (Consider a completely immobilized quadriplegic who has lost all motor functioning in her hands and face and must be hand-fed by another. Such a person qualifies as an eater as much as does anyone else, yet it is untrue that she ought to eat attentively and not spill.) And when we

ask why such an exception is allowable, I do not see any tenable way to answer this question without appealing to certain capabilities that the subject lacks. So, aside from whether “ought implies can” is a true principle or not, my conclusion is that Feldman’s use of ‘role-oughts’ is inadequate to reject the principle.

3. Sleeping, Tasting and Seeing

Based on the considerations raised in the preceding discussion of Feldman’s role-oughts, we have seen that if there is such a thing as epistemic deontologism at all, and furthermore we wish as Feldman does to model the obligations associated with our beliefs on some sort of activity or role that we normally take to be open to deontological assessment, then this activity or role must be one that we not only occupy non-voluntarily, but also one over which we lack any response control with respect to that activity. In this section I turn to offering two such roles that fit this description; thus they serve as better analogies to the role of being a believer than the alternatives Feldman has given us. This discussion will then serve as a basis for helping us to answer whether there are any such things as epistemic obligations, and if so, what the nature of those obligations are.

Before we proceed, however, let me note that one benefit of the view I will propose is that, unlike for Feldman, we will not be forced to reject the “ought-implies-can” principle. All I have said so far is that Feldman has not demonstrated with his role-oughts that the principle is false. I believe “ought implies can” is a true principle, but I have not defended its truth, nor do I intend to do so here. However, Alston is surely right when he describes that Kantian Dictum¹⁹ as one that is “time-honored,” and although this is no adequate justification for its truth, it at least moves us to question whether there can be any room for a concept of epistemic deontology consistent with its being true. This is the question I wish to answer now. So, I will henceforward be *assuming* that “ought” does imply “can.”

One role that aligns more analogously with being a believer would be the role we each have of sleeping. It is important that we each get a certain number of hours per night, without which there can be harmful consequences. As with believing, being a sleeper is a role none of us adopted voluntarily. But also like believing, it turns out that we have very little control when it comes *to* sleeping. Consider as the night gets later, and a parent walks by little Timmy, who is playing with his toys in his bed, and says, “Hey Son, you ought to sleep now.” If we take this claim literally, the thing that Timmy is supposed to do right now is sleep. But he cannot do this, not “just like that.” Granted, if he lies back in his bed

¹⁹ Immanuel Kant, *Critique of Pure Reason* (London: Macmillan & Co., 1933): 473 & 637.

and closes his eyes, these are bodily actions that typically *precede* being asleep. But sleeping and closing one's eyes are not the same. Once in bed with the lights out and eyes closed, and after he has counted all his sheep, there is nothing left for Timmy to *do* so as to be sleeping. The state of sleeping is something that just happens to one with little active participation by the agent. In this sense, I think Timmy, as well as most of us, has no control over whether he sleeps right now or not.²⁰

My suggestion here is that the sense in which we lack control with respect to sleeping serves as a better analogy to the role we take on as believers than eaters or breathers. What, then, are the obligations we have in virtue of being sleepers? I propose that one obligation we do *not* have is the obligation to sleep, if by "sleep" we mean to be in the state of being asleep. Usually, when we hear someone say to us, "You ought to sleep" (or "You ought to get some sleep"), we know exactly what instructions are being handed down. The instructions are not to be asleep, even if, as matter of social convention, this is something we are often *told* to do (said to Timmy: "You had better be sleeping by the time I come back to check on you!"). Rather the instructions are only to get into bed, turn out the lights, close our eyes and then wait for sleep to wash over us. Is there really anything else besides performing these actions that Timmy can be expected to do so as to comply with carrying out his parent's instructions? Suppose Timmy stubbornly retorts to his mother, "What do you mean, 'go to sleep,' Mom? What am I supposed to *do*?" If the mother simply said, "Look, I don't know how you do it. Just sleep!" there really isn't much more for Timmy to do. There is no sort of willing that Timmy could do in that moment to do what his mother just told him. (Consider, in contrast, if the mother told Timmy to wiggle his finger, and he asks how, here I think it would appropriate and correct for her to say, "I don't know *how* you wiggle your finger. Just do it!")

If after turning out the lights and closing his eyes, Timmy then has a restless night where he just does not ever fall asleep, would it be fair of his mother to say the next morning: "You didn't sleep last night? But I told you to right before

²⁰ Certainly there is no basic control in this case. Sleeping is not like moving your finger. But there is no non-basic control either. Timmy can control his body – e.g. be in bed or be in the TV room, have his eyes opened or closed – but it is wrong to think that these activities are *part of* the action of falling asleep, as cutting the vegetables is a part of the action of making dinner or getting out a checkbook is part of the action of paying the rent. Unlike cutting the vegetables or getting a checkbook, moving one's body to bed and closing one's eyes are activities that come before, and usually facilitate, the further event of being asleep. Cutting vegetables, while the agent tends to do this at the beginning of preparing a meal, is itself *a part of* the (complex) activity of making dinner.

bedtime! Were you not listening to me?” It would not. There are no grounds for the mother to hold Timmy accountable for his sleeping or lack thereof, because although there are a set of actions that typically causally precede the event of sleeping (e.g. turning out the lights), they do not always result in sleep; and when they fail to terminate with this result this can be through no fault of the agent that the intended performance fell short. Thus, I contend that while there do exist obligations associated with our roles as sleepers, the obligations we have involve doing various actions that tend to causally precede sleeping, and they involve nothing regarding *being* in that intended state.

The second example I wish to discuss has to do with the kinds of experiences or sensations we have. Let me first concede that unlike eating or believing or sleeping, the very notion of having obligations in virtue of occupying the role of a perceiver seems to be somehow misplaced. Perception occurs at the sub-personal level, after all, and we have very little active participation in what we perceive. Thus with regard to evaluating an experience one came to have on a given occasion, the evaluation is more suitably directed at the perceptual system of the agent, and not the agent herself. Nevertheless, there are occasions where we do hold agents accountable for what they see or hear or feel. We say things to each other like, “Oh, you ought to taste my ice cream flavor!” The “ought” here is merely prudential; it is not a requirement of what you categorically are supposed to be tasting now. Even still, assuming you wish to comply with what your friend has requested, what is it that you are supposed to do? I claim that it is untrue that you are supposed to taste the ice cream, where by this I mean *have* a certain gustatory experience. Rather, as with the case of sleeping, what you are supposed to do is perform various bodily actions that tend to causally result in the intended state being produced. So, to do as your friend has instructed, the thing to do is take hold of the ice cream cone and then lick the treat with your tongue and lips. There is no further requirement after these motions in which you are to *then have* the gustatory experience. The experience is what simply happens once you have done the necessary bodily actions. Even if it does not – if, say, you lick the ice cream but then no gustatory experience follows, perhaps because your taste buds have suddenly been anesthetized – it is through no fault of your own that you did not do as your friend asked. The fault lies instead with the gustatory system.

In a similar fashion we are sometimes, though not commonly, handed obligations about what to see or hear. Suppose two concerned parents have allowed their teenaged daughter, Ellie, to go out with her friends to see the new horror flick, but – fearing her exposure to all the gratuitous violence – they agree only on the condition that Ellie not see any of the violent parts. At first glance, we

may view this as an unreasonable demand on Ellie for the simple reason that none of us, in general, has any control over what we perceive. As my eyes are gazed upon this computer screen right now, I cannot help but have an experience of a computer screen. In a similar way, when I place my hand on the hot stove, there is no sense in which I have control over whether I feel pain or not; the pain is something that just washes over me.

Even though Ellie cannot directly control what experiences she has at any given moment, she nevertheless does have considerable control over whether she complies with her parents' demands. For she can willfully perform various actions that tend to result in her not having the selected experience. As the scene of the cheerleader walking up to the attic all by herself begins, and the darkened, creepy music elevates, Ellie knows that something bloody is about to happen; it is up to her in that moment to, say, put her head down to look at her lap, place her hands over her eyeballs, excuse herself from the group and go to the restroom, or some similar sort of action. In doing so, Ellie winds up seeing none of the gore on the screen, and I argue she has fulfilled her responsibility to her parents' demands.

Just like with the case of sleeping, parents may *say* to kids like Ellie, "You ought not see any of the violent scenes of the movie," but the specific obligation being delivered is not an obligation about what seeings or visual experiences they are supposed to have. The obligation is instead to perform a set of actions that the agent has reason to think tends to result in the omission of the intended experience. As with the ice cream example discussed above, we can imagine that after Ellie reaches the lobby for the purpose of avoiding her seeing the violent scene, the movie theater – because of some new marketing promotion – has placed miniature screens all over the lobby and restrooms of the same horror movie running at the exact same time. When Ellie reaches the lobby, she is caused to see the cheerleader get slashed by the killer. Has Ellie violated her obligation to her parents here? Although she saw the death scene her parents did not want her to see, consider how unreasonable it would be for them to punish Ellie in this situation. Most people are like Ellie in that they assume the lobby is a safe place to hideaway from a running movie. There is nothing more that could be expected of Ellie to have thought of or done so as to achieve what her parents wanted. While the result is unfortunate in the case, the unfortunate result is due to circumstances beyond anything for which Ellie could be responsible.²¹

²¹ When the obligations are directed at having certain experiences, and when they are directed specifically at doing certain bodily motions associated with our sense organs, certainly come can come apart. A parent who is about to be executed may say to her child, "Look away." This is quite different from the situation where the parent, noticing her child staring directly into the

4. Responsible Epistemic Agency

Alston holds that the “ought implies can” principle underwrites his key premise that there can be obligations, duties, permissions, etc., about what one ought to believe only if one has a suitable amount of voluntary control over what one believes. While some have questioned the truth of this premise, and others have challenged Alston’s further premise that we lack the requisite form of doxastic control, I believe that Alston is correct here on both accounts. Thus, I am in agreement with Alston that while we do often say them to each other, claims like “You ought to/have a duty to/are required to believe that p” are never strictly (epistemically) speaking true. However, does it follow from this that there is no room for deontological epistemic evaluations when it comes to an agent’s doxastic performance? I argue that it does not. Even though we may grant that there are no requirements about *what* one is supposed to believe in a given situation, we can still concede the plausible idea that there is a deontological dimension of epistemic justification.

How is it, then, that epistemic agents can be assigned responsibilities with respect to their doxastic performances, and yet it is untrue that there are certain propositions one ought (or ought not) to believe? The answer I wish to motivate in this final section echoes a position espoused by John Heil who says:

It is not that one has a choice in the beliefs that one forms, but that one has a say in the procedure one undertakes that leads to their formation. The notion of ‘epistemic responsibility’ attaches to the undertaking of appropriate procedures.²²

Heil’s point aligns nicely with the non-epistemic examples discussed in the previous section. Timmy has no choice about whether he is in a state of being asleep or not, but he does have a say in the procedure he undertakes that typically leads to sleep. Ellie has no choice about what visual experiences she has, but she does have a say in the actions she performs that leads to her not seeing the blood and gore. The choices these children make with regard to those actions that lead to the intended state are sufficient for us to evaluate whether the child has or has not done what she ought. Yet, this evaluation is directed not at the sleeping state or the experience the child winds up having, but at the actions taken that causally precede these states.

Sun, says “Look away.” The former is a case in which the parent wants the child not to have the emotionally damaging experience of seeing his parent die. In the latter case, parents say this sort of thing to their children not because of the visual experience they would have by seeing the bright Sun (though this can be an unpleasant experience), but rather because of the damage the Sun’s rays can cause to the child’s retina.

²² Heil, “Doxastic Agency,” 363.

Doxastic evaluations, I argue, work in the same manner. While we do not choose which propositions to believe, we have a great deal of choice in the actions we perform that lead to a belief's formation. Some of these actions may be bodily actions, and we can perform these responsibly or irresponsibly. If one is in a state of doubt that one's experience does not match one's outer environment, it may be one's epistemic obligation to move one's body around to get a better look or to alter the lighting conditions to make the subject matter more clear. Other sorts of bodily investigations may be necessary for beliefs sourced in, say, memory or testimony. (e.g. one might be required in some situations to verify through acquaintances that the testifier is a reliable person.) Thus, the agent may be epistemically required to *do* various things so as to acquire some new evidence on the matter. Once it has been acquired, however, it is the evidence that then determines what belief will be formed, not the agent herself.

In cases of purely critical or deliberative reasoning, when there is no need at this point to acquire additional, independent evidence, there are still certain mental actions the agent can perform that are relevant to the formation of a belief and that are sufficiently under one's control. Suppose Sam is nearing the moment of forming an opinion as to whether *p* is true or not. She is in possession of both a set of epistemically relevant reasons concerning *p* (labeled R1, R2, and R3) and also a set of epistemically irrelevant mental states that nonetheless tend to have causal influence over people's beliefs (labeled M1, M2, and M3). M1 might be, for instance, Sam's deep wish that *p* be true, while M2 is a feeling of hatred she has for the person referred to in *p*. We may ask then, given the situation Sam is in, as an epistemic agent what *ought* she do? The first sort of activity over which we have control, and which is closely tied to responsible agency, is whether *to engage* in the exercise of deliberations or not. This is not to say that we are at all times obligated to deliberate whenever a possible belief arises. Most of our non-inferential beliefs, like perceptual or memorial beliefs, are justified, yet we very infrequently need to actively scrutinize our perceptual or memorial evidence every time we come to a belief. In other kinds of cases, due the complexity of the subject matter or of one's own evidential situation, the agent is handed the obligation to engage in deliberations. If Sam's is one of these situations, and she bypasses the procedure altogether and just goes ahead and believes *p*, she fails to meet this epistemic obligation. We have an expression in English that seems to capture this kind of failure, as when we accusingly reproach others by saying, "You just weren't thinking hard enough."

Suppose Sam meets her obligation here and chooses to engage in deliberations. Insofar as deliberations are activities used to come to an answer to

the question of whether p , there is very little control we have as to where the deliberations will end up.²³ Deliberating whether or not Sam comes to believe p is entirely a matter of what it is that she finds compelling. But, surely, neither she nor anyone in like situations have any choice about what she finds compelling; what is compelling to one is entirely a matter toward which one's reasons and non-epistemic factors point.

Sometimes the mere act of beginning deliberations is not enough to exclude irresponsible epistemic conduct. In the action case, one may know the general rule that fighting is bad, but when deliberating what to do on a specific occasion, it may be that one's temptation to fight the enemy is too powerful to keep oneself from fighting. In a similar way, while most of us know that it is a good thing in general to base beliefs exclusively on our evidence, our deliberations are sometimes overpowered by some strong passion or temptation (e.g. a wish that p be true) that tend to steer beliefs away from the truth. If M1 is one of those strong temptations for Sam, it may be that her deliberations are already at the very start geared toward where that temptation points. There is nothing Sam can do about this fact. What, then, is it that Sam and other similar such agents are supposed to do? I propose that they *ought to do those mental actions that tend to facilitate a proper response to the acquired evidence*. Notice the difference between the 'ought' claim listed here and Feldman's OUG. I am not saying that our obligations are to properly respond to the evidence. The reason I say this is that what we respond to in deliberations, what mental states upon which we wind up basing our beliefs, is something over which we have very little control. I cannot just decide to maintain one of my currently held beliefs but change the basis for which I hold it. I cannot directly alter the connections that bind my beliefs and other mental states within the space of reasons. Demanding that one respond properly to one's evidence is analogous to telling Timmy to be in a sleeping state at this very moment, which as I have argued is something he cannot do.

Just as there are bodily actions Timmy can do so as to facilitate the state of sleep (e.g. lie down in bed), there are mental actions epistemic agents like Sam can do so as to facilitate properly responding to one's evidence. In particular, while in deliberations one can willfully choose to pause and ask (or even re-ask) oneself the question: "What are my reasons here?" The very asking of this question prompts the agent to change course and take a higher-order, reflective stance towards one's own doxastic situation and, moreover, determine what factors have been influencing deliberations up until the question was asked. In taking this stance,

²³ This is a point contested by Steup ("Doxastic Voluntarism and Epistemic Deontology" and "Doxastic Freedom").

the agent is more likely to be caused to redirect her mind away from her non-epistemic temptations or passions and to zero in on the evidence. “Are these reasons any good?” is another sort of self-reflective question that, in the very activity of asking it, brings the agent to scrutinize her evidence, ensuring a higher likelihood that whichever belief she ultimately forms is the proper response from her evidence.

As I say the sorts of mental activities mentioned here are those that tend to lead to proper evidential responses. They do not always do so. If M1 is Sam’s wish that *p* be true, the temptation may be so powerful that even after she has asked herself the self-reflective questions, her belief that *p* is ultimately a response to that wish (just as the mother who cannot accept the lead detective’s testimony that her son is dead due to her psychologically compulsory hope that he is still alive). From a deontological point of view, I claim that Sam has nonetheless fulfilled all of her epistemic obligations. She is a responsible agent.

There is an objection to the account I am proposing, one which comes from Alston in his seminal paper.²⁴ While he concedes that we do possess a kind of indirect voluntary influence over our beliefs, of the sort that I have been describing here, Alston ultimately concludes that deontological concepts like requirement and blame, as tied to this indirect sort of influence, cannot underwrite the concept of epistemic justification. For, he thinks that this deontological approach to epistemology fails to capture the truth-conducive nature of epistemic justification: epistemically justified beliefs are true or at least likely to be true. The example with Sam above illustrates this complaint well. Sam, as I have claimed, stands in no violation of any epistemic obligations, and yet beliefs which are formed in such a way on the basis of a wish tend to be highly unreliable. So, assuming that Alston is correct about the objective relation between epistemic justification and truth, are we forced to abandon epistemic deontology altogether?

I argue that the answer is “no.” For it is consistent, on the view that I am advancing, that an agent can act (epistemically) responsibly with respect to the belief her actions influence while at the same time falling short of acquiring a (epistemically) justified belief. With regard to Sam, then, it may well be that she is unjustified in believing *p*, given that it was ultimately grounded in a wish. But there are no grounds for blaming her for how she performed. (Similarly, even if Timmy winds up having a completely sleepless night, his parents cannot rightly blame him for this, given that he did all the necessary actions that tend to bring

²⁴ Alston, “The Deontological Conception,” Section 7.

about sleep.) How, then, can it be that an agent could be responsible for holding a belief which she is nevertheless unjustified in holding?

I will close with one brief suggestion, and to do so let me first introduce a distinction from the literature that often gets made in the context of responsible epistemic agency.²⁵ We may make, on the one hand, an *evaluative* epistemic assessment of the *belief* formed by the agent, according to which beliefs are assessed favorably as far as they satisfy some epistemically relevant good. Thus, along reliabilist lines, for example, a belief receives a favorable evaluative assessment insofar as the belief was produced by what is in point of fact a reliable process. Or, along evidentialist lines, we would say that a belief's evaluative assessment is determined by how well the belief fits with the agent's evidence at the time. On the other hand, we may instead offer a *regulative* epistemic assessment of the *agent* with respect to the belief she formed. This sort of assessment is determined strictly in accordance with the agent's own point of view. Taking stock of everything present to the agent's mind at the time, including not only the justification-conferring grounds or evidence of which she is in possession, but also all doxastically relevant factors – like emotional or other non-epistemic influences and her ability to resist them in forming a judgment, her competency in reasoning, and her ability to recognize rational links between her reasons and the proposition her reasons support – the primary question is a deontological one: has she done all that can be expected of her to do?

With respect to the question, “in virtue of what are agent's beliefs epistemically justified?” a strong internalist answer would be that justification is a matter of receiving favorable regulative epistemic assessment. For a strong externalist, in contrast, justification is a matter of receiving a favorable evaluative epistemic assessment. But neither of these assessments, on their own, are able to capture that special feature of justification we all deem to be so important, namely, that a justified belief is such that a) it bears an objective likelihood of truth and b) the agent who forms this belief has done so in a responsible manner. Therefore, I suggest that the concept of justification is sufficiently complex, such that deontological assessments are but one component, out of multiple components, to

²⁵ The sort of distinction I have in mind here has been made in places such as Alvin Goldman, “The Internalist Conception of Justification,” *Journal of Philosophy* 75 (1980), Kent Bach, “A Rationale for Reliabilism,” *The Monist* 68 (1985), Philip Goggans, “Epistemic Obligations and Doxastic Voluntarism,” *Analysis* 51 (1991), and Alvin Plantinga, *Warrant: The Current Debate* (Oxford: Oxford University Press, 1993), 15-19. See also James Pryor, “Highlights of Recent Epistemology,” *The British Journal for the Philosophy of Science* 52 (2001): Section 4 for a discussion.

determining whether an agent is justified.²⁶ I myself hold that the demands of justification are such that being justified implies that the agent's doxastic performance receives favorable assessments from *both* a regulative and an evaluative perspective. That is, if S's belief that p is justified, then it is true, first, that she has fulfilled all her deontological requirements, and secondly, that the belief formed satisfies some epistemically relevant good, such as its actually and objectively being a proper response to the agent's evidence. Thus, while it may be true that all justified agents are responsible agents, it does not follow that all responsible agents are justified agents.

5. Conclusion

In conclusion, I have argued that Richard Feldman's 'role-ought' response to Alston's argument from doxastic involuntarism fails. However, when we find those roles that are most analogous to that of being a believer, we find that there is room to be made for deontological assessments even if we lack any suitable form of doxastic control and also that "ought" does imply "can." The upshot is that the deontological dimension of justification requires, not voluntarily forming any particular belief, but voluntarily performing those mental actions that tend to bring about a self-reflective stance in the agent, which in turn increases the likelihood that the agent's doxastic state properly connects back to her evidence.²⁷

²⁶ See fn 3.

²⁷ For their helpful comments on earlier versions of this paper, I wish to thank Kevin Falvey, Anthony Brueckner, Michael Rescorla, Joe Berendzen, Ben Bayer, Patrick Leland, the Epistemology Research Group at the University of Edinburgh, and participants at the first annual Southern Epistemology Conference.

AN ARGUMENT AGAINST THE POSSIBILITY OF GETTIERED BELIEFS

Benoit GAULTIER

ABSTRACT: In this paper, I propose a new argument against Gettier's counterexamples to the thesis that knowledge is justified true belief. I claim that if there is no doxastic voluntarism, and if it is admitted that one has formed the belief that p at t_1 if, at t_0 , one would be surprised to learn or discover that *not-p*, it can be plausibly argued that Gettiered beliefs simply cannot be formed.

KEYWORDS: belief, evidence, Gettier cases

In "Is Justified True Belief Knowledge?" Edmund Gettier is supposed to have shown that knowledge is not justified true belief.¹ A few philosophers have maintained that our intuition that the beliefs involved in Gettier's counterexamples do not amount to knowledge should be resisted. But most of Gettier's critics have rather argued that these beliefs are not really justified. In other words, it has often been claimed that since his counterexamples are implicitly based on a disputable – if not erroneous – theory of justification, Gettier's conclusion should not have any more authority than any other epistemological views regarding justification and knowledge.

In this paper, I propose a new argument against Gettier's counterexamples. This argument consists neither in showing that the beliefs that he considers to be true and justified actually amount to knowledge, nor in arguing that they are actually unjustified, but instead in arguing that Gettiered beliefs simply cannot be formed. If this argument is correct, the reasoning at work in Gettier cases can be rejected independently of any theory of knowledge and justification.

I

I shall focus in this paper on a classic type of Gettier case,² which does not appear in the 1963 article but which clearly instantiates the fundamental principle upon which all Gettier cases are built.

Let us imagine that I visit a company, and that one of its employees, John, tells me that he owns a Ford. Let us also imagine that I have good reasons to believe him: 1) John shows me with pride his Ford key ring, as well as a car

¹ Edmund Gettier, "Is Justified True Belief Knowledge?" *Analysis* 23 (1963): 121-123.

² See Keith Lehrer, "Knowledge, Truth and Evidence," *Analysis* 25 (1965): 168-75.

registration document which indicates the tax category of the Ford model that he is telling me about; 2) one of his clients telephones him and I hear him ask John whether he is still satisfied with his Ford; 3) several of his long-standing colleagues tell me, whilst John is on the phone, that he is honest and trustworthiness personified. Consequently, I believe that John owns a Ford, from which I then infer that someone in the company owns a Ford.

However, it turns out that 1) John lied to me and does not own a Ford; and that 2) another employee in the company, Martin, with whom I did not speak and of whom I knew nothing, does own one. As a consequence, my belief that John owns a Ford is justified and ipso facto so is my belief that someone in the company owns a Ford. But although the first belief is wrong, the second is true, because someone else in the company, Martin, does own a Ford. This second belief is therefore true and justified but does not constitute knowledge: I do not know that someone in the company owns a Ford.

The idea that, in such a case, I truly (and justifiably) believe that someone in the company owns a Ford is, however, contestable.

Let us begin with a relatively trivial point that, in itself, is not sufficient to refute this idea, but which should not be neglected: The belief I could express in saying that someone in the company owns a Ford could be a belief about John in particular, and not a belief about anyone in the company. It is John and he alone who could be concerned by the vague description "someone in the company." Let us imagine, in order to illustrate this point, that my cousin Hugh has been going out for a while with a beautiful girl and that his young brother Charles has witnessed him adopting, before he goes out to meet her, the typical behaviour of a man in love. Let us then imagine that during a Sunday family lunch, Charles feels like teasing Hugh and says out loud, with a slight smirk on his face: "Someone at this table is in love...." And let us eventually imagine that in fact Hugh is not at all in love with this young girl but that my cousin Brian, also present, secretly is. It is obvious in this case that the belief that Charles expressed in saying "someone at this table is in love..." was about Hugh. Therefore this belief is false and cannot be made true by the fact that Brian is in love with this young girl. Charles would be insincere if he discovered the truth and said something along the lines of: "I was not mistaken as Brian is indeed in love."

Certainly, it will be rightly remarked: "We all agree. The belief that John owns a Ford is false, and it might be that by saying that someone in the company owns a Ford, it is John that is referred to, hence expressing the belief that John owns a Ford. But how is this obvious point relevant to the philosophical analysis of Gettier cases? They are about imagining that one forms not only the belief that

John owns a Ford but, *in addition*, the *different* belief that someone in the company owns a Ford – by drawing the indisputably sound inference that necessarily if John owns a Ford, then someone owns a Ford. The introduction of this second belief makes a crucial difference.”

Indeed, everything depends on this point. Yet, while the debates to which Gettier's article have given rise have been about the epistemological status of this second belief, the question of its possibility has not itself been convincingly challenged. However, it can arguably be claimed that when the belief that John owns a Ford has been formed in the way indicated in the description of the Gettier case, this belief cannot lead one to form, in addition, the different belief that someone in the company owns a Ford.

II

The argument that supports this claim is as follows:

1. One cannot believe at will (Doxastic Involuntarism).
2. (DoxInv) means, more precisely, that, at time t , one cannot believe about the question whether p something *else* than what, at t , the evidence E that one judges to be relative to p being or not the case appears to one to support or establish about the question whether p .
3. It is uncontroversial that (DoxInv) implies that, at t , one cannot believe about the question whether p something *that exceeds or goes beyond* what, at t , E appears to one to support or establish about the question whether p .
4. But why would not (DoxInv) also imply (THESIS) – namely, that, at t , one cannot believe about the question whether p something *weaker*, more indefinite or undetermined, than what, at t , E appears to one to support or establish about the question whether p ?
5. The reason for refusing to draw this inference is the claim that (DoxInv) is to be explained by the fact that belief has a constitutive epistemic aim or norm, be it truth, knowledge, or justification: one cannot believe about the question whether p something *that exceeds* what E appears to support or establish, because in such a case one would judge oneself to believe in an unreliable or unjustified way – which is impossible if belief has truth, knowledge, or justification as constitutive aims or norms. However, it is perfectly possible to believe something *weaker* than what E

appears to support or establish, since this is a good way to satisfy these aims or norms.

6. However, even if it is admitted that there are such epistemic aims or norms of belief involved in the process of belief formation, and that they control or regulate this process – which is far from being indisputable – it does not ensue that the only way evidence constrains belief is *through* such aims or norms, and that evidence has *in itself* no power to determine what one believes.
7. On the contrary, it seems plausible to claim that evidence directly constrains belief – more specifically, that one's beliefs formed at t directly inherit their content from the evidence one judges at t to have for them. It even seems that this *has to be so*, because if evidence constrained one's beliefs only through such epistemic aims or norms, one would always believe something as weak as possible on the basis of the evidence one has, in order to satisfy these aims or norms – which is clearly not the case.
8. But if one's beliefs formed at t directly inherit their content from the evidence one judges at t to have for them, we do not have any reason to deny that (DoxInv) implies (THESIS). In other words, if we judge (7) to be plausible, it would be arbitrary to reject (THESIS).

More positively at present:

9. If it is admitted – rather uncontroversially – that one has formed the belief that p at $t-1$ if, at $t0$, one would be surprised to learn or discover that *not-p*, then the supporter of the thesis that it is possible, in the Gettier case in question, to form the belief that someone in the company owns a Ford in addition to the belief that John owns a Ford also has to support the following claim: if one were to learn that John does not own a Ford after a) having formed the belief that John owns a Ford (and, moreover, formed the belief that nobody else in the company owns Fords), and b) having explicitly admitted that if John owns a Ford then someone in the company owns a Ford, then one would be *doubly* surprised: added to the surprise that John does not own a Ford, one would undergo an *additional* surprise – namely, the surprise that nobody in the company owns a Ford.
10. But this claim looks extremely implausible.

11. Now, the simplest way to account for the fact that, in this situation, one would not be doubly surprised is to hold that one has not formed two distinct beliefs when one has formed the belief that John owns a Ford and admitted that if John owns a Ford then someone in the company owns a Ford.
12. Therefore, we should not consider obvious (far from it, given the implausibility of its “double surprise” consequence) what Gettier takes for granted – namely, the idea that, in this situation, one has formed the true belief that someone in the company owns a Ford in addition to the false belief that John owns a Ford.
13. Since (THESIS) can explain why, in this situation, one would not have formed the true belief that someone in the company owns a Ford in addition to the false belief that John owns a Ford, (THESIS) should be considered as plausible at least. This does not mean that (THESIS) does not need additional defence and argument, but it does mean that its being highly unorthodox should not lead one to claim that it should simply be dismissed as long as it is not accompanied by an extensive discussion of the nature of belief and evidence, the functional role belief plays, or, for instance, its relation to belief-ascriptions.

In order to clarify the meaning of (THESIS) and to show that it is not as counterintuitive as it might seem at first sight, I shall answer two objections that it is quite natural to raise against it.

The first is as follows: if someone comes into John’s office (after he told me that he owns a Ford and I have formed the belief that he owns one) and asks: “Who here believes that someone in this company owns a Ford?,” should I raise my hand or not? (THESIS) seems to imply that I should not, on the ground that I believe that *John* owns a Ford. But this is clearly untenable. In the same way, if, during a trial, the judge asks me whether I believe that somebody lives on the upper floor of the building that I inhabit, and that I answer “no” because my evidence supports something more precise – namely, that Mary and Isaac live there – I will be *rightfully* convicted of perjury. But does (THESIS) not entail that there is no perjury in such a case?

The way the supporter of (THESIS) can reject this objection is rather simple: I should answer “yes” to the judge who asks me: “Do you believe that somebody lives on the upper floor of the building in which you live?” and I should raise my hand when I am asked: “Who here believes that someone in this

company owns a Ford?” But I should not do so because I entertain two other beliefs in addition to the beliefs that John owns a Ford and that Mary and Isaac live on the upper floor of the building – namely, the belief that someone owns a Ford, and the belief that someone lives there. I have to answer “yes” to the judge simply because “... that somebody lives on the upper floor of the building” constitutes a *true characterization of what I believe*. It is more vague, less precise, than “... that Mary and Isaac live on the upper floor of the building,” but it is nonetheless true. If the judge furthermore asks: “Do you believe that *Mary and Isaac* live on the upper floor of the building?” I could answer something like: “yes, *exactly*,” since this is a much better description of what I believe than “...that somebody lives on the upper floor of the building.” But this does not mean that “...that somebody lives on the upper floor of the building” is any less true. This is the reason why I would have been *rightfully* convicted of perjury if I had answered “no” to the judge.

The second objection is as follows: if (THESIS) were true, one could not even believe that John owns a Ford. If one cannot believe less than what the evidence appears to support, the only thing one can believe about John is that John, who has a Ford key ring, who is sat at this desk, who wears a blue polo short, who is a human being, who lives on earth, etc., owns a Ford. In other words, if (THESIS) were true, the only belief one could have about John would be a gigantic and almost infinite belief encompassing everything that appears to one to be the case about John. As a result, it would be false to say that one can entertain different beliefs about John – for instance, that he owns a Ford, and that he wears a blue polo shirt. But this is definitely unacceptable. Therefore (THESIS) is false.

However, (THESIS) is not committed to such an absurdity. The thesis that, at t , one cannot believe about the question whether p something *weaker* than what, at t , E appears to one to support about this question is to be understood as follows: when, *and only when*, the *only* evidence one has in favour of something weaker than p – namely, p^* – is the evidence one has in favour of p and that led one to believe that p , we cannot be in presence of two different beliefs – the belief that p and the belief that p^* – but only in presence of one single belief, the belief that p .

More specifically, if it turns out that one admits or realizes that it follows from p that p^* , one then not only believes that p but also believes that it is veridical (but incomplete) to describe the fact that p by saying that p^* . However, one does not thereby believe that p^* in addition to believing that p .

It ensues that since the evidence one has in favour of John owning a Ford is not, for instance, the evidence one has in favour of John wearing a blue polo short, (THESIS) does not entail in any way that one cannot entertain two different beliefs about John – that he owns a Ford, and that he wears a blue polo shirt. What (THESIS) actually involves is that to believe that *someone* owns a Ford the kind of evidence that is needed is evidence that does not establish that someone owns a Ford *only by establishing that such and such an individual owns one* – which is not the case in the Gettier case under discussion.

If however I had noticed, upon arriving at the company, a Ford parked in the employee parking lot (to which the access is strictly controlled), I would have had evidence that someone in the company owns a Ford, and it would have led me to believe this was the case – or to go on believing so, even after having talked to John and formed the *different* belief that *he* owns a Ford. This is because this perceptual evidence does not support the claim that someone in the company owns a Ford *only by supporting the stronger claim that such and such an individual in particular owns one*.

In order to summarize the aspects of (THESIS) that have just been stressed, let us consider another situation: Let us imagine that I tragically see, as I go in to his office, my friend George being murdered by my other friend Peter. In such a situation, according to (THESIS), I cannot form the belief that someone murdered George *in addition to* the belief that Peter murdered George, because the evidence I have appears to me to establish that someone murdered George only by establishing that he was murdered by Peter. When I believe, on such an evidential basis, that Peter murdered George, what it is possible for me to believe in addition is, for instance, that the statement that someone murdered George veridically (but partially) describes what happened. But this does not imply in any way that I have thereby formed in addition the belief that someone murdered George. Believing that this is a true description of what happened would imply believing that someone murdered George only if it were true that, to every way in which one can express or describe one's belief that *p*, corresponds a belief that *adds* to this belief that *p* – which does not have the slightest plausibility. In the same way, if I am very pleased by the good news I received from my old friend Duncan, my feeling can be correctly described by saying that I am very pleased by something, and I can perfectly consider that it is a true description of what I feel. But this does not prove in any way that there is an additional feeling that explains the truth of this description: the feeling of being very pleased by something.

III

It might also be objected to (THESIS) that if one believes that the statement that someone owns a Ford is true, it ensues that one believes that someone owns a Ford. But this objection rests upon a confusion that can be easily dissipated: To believe that p is not to believe that the sentence or statement “ p ” is true. One can for instance believe that “ p ” is true even though one does not at all understand the meaning of “ p ,” but one cannot believe that p in such a case.

Let us imagine for example that my knowledge of physics is virtually inexistent and that, as I enter the class given by the Nobel Prize Laureate in Physics David Wineland, I hear him state, having no idea what he is talking about: “I remind you this: The spin quantum number of the fermions is a half-integer.” Let us also imagine that I know that David Wineland is extremely reliable when it comes to the notions he teaches in his lessons. Therefore, I believe (and, arguably, know) that the following sentence is true: “The spin quantum number of the fermions is a half-integer.” Nevertheless, can I believe (or know) that the spin quantum number of the fermions is a half-integer? Let us imagine this time that David Wineland, in a whimsical moment, does not state this in English but in a language that I do not understand in the slightest – Icelandic for example (“I remind you this: [statement in Icelandic]”). In this case, it would be obviously absurd to maintain that after having heard David Wineland, I believe (or know) that the spin quantum number of the fermions is a half-integer. Now, there is no reason to suppose that things should be different when the statement is made in English and I have no idea what he is talking about; being able to grasp the grammatical structure of the English sentence but not of the Icelandic sentence is not enough to make a difference on this point. Therefore, I can actually believe that I am saying something true by repeating the English or the Icelandic sentence, and memorise the English or the Icelandic sentence for this reason, without however being in a position to believe what the latter states. In brief, I can believe that “ p ” is true without being in a position to believe that p .

Therefore, to return to the Ford case, it is perfectly possible to believe that the sentence “someone in the company owns a Ford” is true, and to believe that this follows from the fact that John owns a Ford, but not to have the additional belief that someone owns a Ford. To put it another way, if, after having listened to John, someone were to ask me what I believe, and that I answered: “Well, I believe that *John* owns a Ford ... and therefore that *someone* owns a Ford,” the only additional belief that I express after my moment of reflection is that what I believe – that John owns a Ford – can be correctly (but partially) described in this way; something I had not explicitly thought of before this moment.

IV

If (THESIS) is true, it does not follow at all that it cannot be shown that justified true belief is not knowledge, only that this cannot be done by creating cases on the basis of the principle that might be labelled the *principle of weakening, by undefinition, of a false and justified belief*.³ Amongst the cases that are often categorised as Gettier cases, only those that are not based on such a principle can achieve this – such as, for instance, the Barn façades case or the Dictator’s death case (in which an “environmental epistemic luck” intervenes that excludes knowledge).⁴ However, as revealed by the diversity of intuitions epistemologists have about these cases, they do not seem to be able to *prove* the epistemological conclusion that “genuine” Gettier cases, based on the principle of a weakening of a false and justified belief, seemed to be able to prove.

Does this mean that there is no hope for showing indisputably that a belief may be true and justified and yet not constitute knowledge, without resorting to the principle of undefinition of a false belief? Certainly not. The belief in question in Russell’s (seemingly epistemologically neutral) case of the stopped clock, for

³ I note in passing that the following case is not based on such a principle, and so it is perfectly compatible with (THESIS): I can believe that John owns a Ford, later forget which employee in the company owns a Ford, and so believe only that someone in the company owns a Ford. If it turns out that John lied to me and does not own a Ford, but that another employee does own one, the resulting belief that someone in the company owns a Ford is, arguably, a justified true belief that is not knowledge. In this case, I am not supposed to have a belief that is weaker than the belief that I take the evidence to support and that would be based on that evidence only.

I also note that it could be argued, about the case that has just been described, that the belief that someone in the company owns a Ford is, in actual fact, simply false, because it is about the particular employee to which I talked but that I would not be able to identify anymore and whose name I do not remember – namely John. And John does not own a Ford.

⁴ The first case, imagined by Carl Ginet (and reported in Alvin Goldman, “Discrimination and Perceptual Knowledge,” *Journal of Philosophy* 73 (1976): 771–791), goes as follows: Barney is driving, unbeknownst to him, in a county peppered with barn-façades. He decides to walk a few steps, so stops his car in front of the only real barn in the county, and believes that there is a barn in front of him. Even if true and justified, this belief does not seem to amount to knowledge. The second case, imagined by Gilbert Harman, goes as follows, in Robert Nozick’s words: “The dictator of a country is killed; in their first edition, newspapers print the story, but later all the country’s newspapers and other media deny the story, falsely. Everyone who encounters the denial believes it (or does not know what to believe and so suspends judgment). Only one person in the country fails to hear any denial and he continues to believe the truth. [...] We are reluctant to say he knows the truth. The reason is that if he had heard the denials, he too would have believed them, just like everyone else.” (In Robert Nozick, *Philosophical explanations* (Oxford: Clarendon Press, 1981), 177)

example, clearly appears to be an instance of justified true belief that is not knowledge. For the record, this case is as follows: the clock in S's living room stopped, unbeknownst to S, at 10.30 PM, while she was asleep. The next morning, S enters the living room at 10.30 AM to check the time. She has no reason to believe that the clock has stopped, and consequently believes that it is 10:30 AM. S, in this situation, does not know that it is 10:30 AM, but truly and justifiably believes it.

One question that probably deserves to be raised in conclusion is whether there is, after all, any good reason for classifying such a justified true belief – or those in question in the Barn façades case or the case of the Dictator's death, for instance – as “Gettiered.” Indeed, it could be argued that this is nothing more than a rather unhelpful verbal stipulation, devoid of all epistemological *raison d'être*, if, as it appears, explanations of the absence of knowledge in these cases have almost nothing in common – and, above all, nothing in common with the reason for there being no knowledge in the classic Ford case that we considered above. If, for the purpose of epistemological clarity, it was specified that in order to be considered Gettiered, a justified true belief must result from the use of the principle of weakening of a justified false belief, it could be claimed – if (THESIS) is correct – that there are no Gettiered beliefs. And this would not mean in any way that there cannot be justified true beliefs that do not amount to knowledge.

EXTERNALISM, SKEPTICISM, AND BELIEF

Michael Shaw PERRY

ABSTRACT: In this paper I analyze epistemological externalism and its adequacy as a response to skepticism. Externalism is defined by denial of accessibility: a subject can know if a particular condition beyond truth and belief is satisfied, even if the subject has no reflective access to the satisfaction of the condition. It hence has quick responses to skepticism. Three sorts of skepticism are differentiated and discussed: high standards skepticism, Cartesian-style skepticism, and Pyrrhonism. If we decouple high standards and Cartesian-style skepticism, a simple fallibilism is a superior response to the first and externalism is an unsatisfying response to the second. Pyrrhonism reveals what it is missing in externalism. Pyrrhonism targets belief and so redefinitions of knowledge are insufficient as a reply. Externalism assumes we have beliefs and asks what must be added to achieve knowledge, but if we look at the epistemic situation the externalist puts us in, it is not clear we would form or retain beliefs. In similar circumstances the Pyrrhonist suspends judgment. Once we are clear how Pyrrhonism actually challenges externalism it provides a direct and more revealing critique, making clear what is given up and pointing the way for further epistemological inquiry.

KEYWORDS: externalism, skepticism, pyrrhonism, epistemology

1. Introduction

Externalists in epistemology hold that some fact external to the subject can be the crucial factor in determining whether that subject knows. This is unenlightening and part of this paper will attempt to specify just what externalism is with more clarity. Roughly, however, it urges us to move away from justification in the sense of having available reasons and towards some fact about the subject and her relation to the world – stressing a causal connection or a reliable capacity to form true beliefs or a virtuous feature of one’s cognitive character.¹

Externalism can be attractive for several reasons. In response to Gettier’s refutation of the justified true belief account of knowledge externalists offer

¹ There are a wide variety of externalist epistemologies. A causal theory is presented in Alvin Goldman, “A Causal Theory of Knowing,” *Journal of Philosophy* 64 (1967): 335-372. Process reliabilism is advocated in Alvin Goldman, “What is Justified Belief?” in *Justification and Knowledge*, ed. George S. Pappas (Dordrecht: D. Reidel, 1976), 1-23. Agent reliabilism is developed in great detail in John Greco, *Putting Skeptics in Their Place* (New York: Cambridge University Press, 2000).

theories that replace the justification condition.² The post-Gettier literature suggests this is more difficult than it may initially seem, but once justification was called into question as sufficient along with true belief to constitute knowledge, it was natural to question whether it was even necessary. Second, externalism appears to fit well with naturalism and scientific inquiries into the knowing subject. If knowledge is a matter of some fact about the subject, we can determine from the outside then we might have the beginnings of a scientific account. Finally, externalism provides a seemingly easy reply to skepticism. Skepticism often targets the justification for our beliefs, but if we can attain knowledge without justification then we can avoid the skeptical abyss.

In this paper I shall be concerned with understanding and evaluating externalism, or what I term pure externalism, in relation to skepticism. Pure externalism wishes not only to add conditions to traditional accounts of knowledge, but to supplant them. Section 2 develops a better understanding of externalism and Section 3 differentiates three sorts of skeptics: high standards skeptics, Cartesian-style skeptics, and Pyrrhonists. Sections 4, 5, and 6 discuss the relationship between externalism and each, arguing that Pyrrhonism reveals what externalism is missing. Section 7 draws conclusions about externalism and epistemology.

2. Externalism Defined

Epistemic externalism is difficult to pin down. Some feature of knowledge is identified as external rather than internal to the knowing subject. A simple internalist might hold that S knows that P if and only if (1) S believes that P, (2) P, and (3) S is justified in believing that P. A simple causal theorist holds that S knows that P if and only if (1) S believes that P, (2) P, and (3) S's belief that P is appropriately caused by P. What suffices for justification and what is an appropriate causal link is a matter for further development. Difference over the third condition separates the two, though things can become more complicated because there can be confusion regarding the external/internal nature of a condition and more conditions can be offered. Moreover, it isn't always clear whether externalists are jettisoning justification or giving a different, and in their view better, account of it.

The two simple positions agree on the first two conditions. Most also agree that belief is an internal condition and that truth is an external condition. If I believe that P then I can at least discover that I believe that P. Beliefs are not

² Edmund Gettier, "Is Justified True Belief Knowledge?" *Analysis* 23 (1963): 121-23.

always wholly, immediately apparent, but through reflection and prodding they can be made clear. We do talk of beliefs that a subject is not aware of, usually with phrases like “deep down” and the like. Here we are pointing to a belief reflected in the subject’s behavior in some way even though for various reasons he will disavow the belief. This does not make belief external in the relevant sense – here we think that the subject has cognitive or conscious access to the belief, but is blocked from that access.

For most propositions the truth is not something determined by the subject. It is independent. There are special cases. Self-referring beliefs may be true in virtue of their being believed and the subject can act so as to make a claim true. But generally truth outruns belief and is independent of it – merely thinking something so does not make it so.

Most externalists and internalists can agree that knowledge has both internal and external aspects, facing inwards in belief and outwards in truth. The two are separated by what is added. A usually undefined notion of justification is often taken to be the paradigm case of an internalist condition. It was this ambiguous sense of justification that Gettier refuted. A belief is justified if one is entitled to that belief, if it is believed responsibly. These are internal conditions because they refer to something about the believer, and more specifically, something the believer could *provide* as a justification. In order to be justified in this internalist sense I need not have present to mind or even easily accessible my justification or vindication of my belief. But I must be able to provide it when questioned.

Externalists de-emphasize this sort of justification that the believer can provide or develop when challenged. Rather, knowledge requires some condition be met that can be determined from a sideways on point of view. It is a fact about the subject, not an ability or reason possessed by the subject, that is essential. We must be careful here to avoid two confusions. First, the fact that must obtain for the externalist need not be external to the knower in the usual sense of external, that is outside the body. On a simple causal theory it is – we look at the causal connection between the fact and the belief. But on a simple agent reliabilism it is not external in this sense, what matters is a capacity that belongs to the agent and is part of her cognitive character. The external in externalism pertains to that which is without the conscious mind, to speak roughly, rather than outside the skin.

Second, internalists and externalists need not disagree about sideways-on facts being important to knowledge. An internalist may hold that we can determine whether a believer is justified from a sideways on point of view by

examining his abilities and behavior. Where the internalist and externalist differ is on the subjective side – for the internalist, but not the externalist, the fact that is added to true belief to constitute knowledge must be available or accessible to the subject. For the externalist the fact in question obtaining is enough on its own, whether or not the subject can state that it obtains.

The point is important. Internalists need have no animosity to appropriate causal connections, reliable belief forming mechanisms, or any of the proffered externalist conditions. The internalist only insists that in order to have knowledge based on that reliability the subject must have access to that reliability.³ In the case of vision the internalist requires that on top of my visual reliability I must also be aware that I am reliable. I need not be able to state *how* exactly that process works; to be justified I need only ascertain *that* it works. So if I can state that I am reliable then I have satisfied the internalist condition. The externalist does not require this last piece. Whether or not I can justifiably state that my belief forming process is reliable, if in fact it is reliable, I know. The subjective perspective is inessential.

The clearest way to state the difference between externalists and internalists, then, is via an accessibility condition. Internalists, but not externalists, require that a feature beyond truth and belief be accessible to the subject in order for the subject to know. Externalists, but not internalists, allow that a condition beyond truth and belief may be inaccessible to the subject, or that the accessibility of that condition is immaterial to the fact of the matter about knowledge. Accessibility means that the subject has the ability to justifiably state that the condition is met. To evaluate externalism, then, we thus look to situations in which the condition is met but the subject lacks access to this, as such cases provide contrasts between externalism and internalism.

There is a sizable middle ground between the two pure positions – an epistemologist may require both sorts of conditions and so be a hybrid theorist. Ernest Sosa presents a theory of this kind: animal knowledge is externalist, reliably produced true belief. But to be properly called knowledge the subject must gain an epistemic perspective and attain reflective knowledge that takes on an internalist character.⁴ Susan Haack makes similar moves.⁵ Robert Fogelin's discussion of the

³ See Wilfrid Sellars, "Empiricism and the Philosophy of Mind," in his *Science, Perception and Reality* (Atascadero, CA: Ridgeview Publishing Company, 1991), 127-196 (esp. §37) for an example of a view that is both concerned with reliability and qualifies as internalist.

⁴ Ernest Sosa, *A Virtue Epistemology: Apt Belief and Reflective Knowledge*, vol. 1 (New York: Oxford University Press, 2007).

⁵ Susan Haack, *Evidence and Inquiry: Towards Reconstruction in Epistemology* (Malden, MA: Blackwell Publishing, 1995).

Gettier problem provides a subtle analysis of justification is encompassing both epistemic responsibility and proper grounding, which have internalist and externalist characters, respectively.⁶

Hybrid theories are not my concern here. They seek to *retain* the traditional valuation of justification and *add* externalist insights to deal with problems such as skepticism and Gettier. Whether they succeed is another matter. Here I wish to examine externalist accounts that *reject* the traditional valuation of justification and *replace* it with an externalist condition. These positions are pure externalist: they declare that accessible justification is not only insufficient for knowledge but also unnecessary. Instead, a feature of the agent, environment, or their relation must be fulfilled and it is unnecessary that this fulfillment be accessible to the conscious subject. The question of whether or not externalists reject justification or redefine is a distinction without a difference. In short, it is a battle over a word, and while perhaps the game is worth the candle, playing it isn't necessary to evaluate externalism. For the purposes of this paper when I speak of justification, I mean something that meets the internalist accessibility condition.

Accessibility is not equivalent to transparency or the iteration of knowledge, the principle that if S knows that P then S knows that S knows P. It is tempting to define externalism as a denial of this principle, but we must be careful. The same analysis of knowledge the externalist introduces in terms of a first order knowledge also applies to the second order knowledge. So one can have second order knowledge if one believes one knows, one knows, and the external condition is met. Transparency can hold, even if we are not aware that the external condition is met for either belief.⁷

There is something regarding transparency that the externalist is denying. This is just accessibility. We don't have the sort of access to our epistemic situation that we might like. But this is not a denial of transparency because transparency is a fact about our epistemic situation. The externalist's commitment is deeper – we

⁶ Robert Fogelin, *Pyrrhonian Reflections on Knowledge and Justification* (New York: Oxford University Press, 1994).

⁷ A denial of transparency better captures some sorts of contextualism. When we query whether or not S knows that S knows that P the context may change such that the original justification no longer suffices. This could be because we have raised what Fogelin, *Pyrrhonian Reflections* calls the level of scrutiny or because we have changed what Michael Williams calls the angle of scrutiny (see Michael Williams, *Problems of Knowledge: A Critical Introduction to Epistemology* (New York: Oxford University Press, 2001) and Michael Williams, "The Agrippan Argument and Two Forms of Skepticism," in *Pyrrhonian Skepticism*, ed. Walter Sinnott-Armstrong (New York: Oxford University Press, 2004), 121-145).

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are not simply removed from our epistemic situation when engaging in philosophical reflection, we are always disengaged from it in that our access to it is inessential. We can know and know that we know, but be unable to ascertain that we meet the conditions. Our epistemic state is not fractured, rather we, as inquiring agents giving and asking for reasons, can become fractured from our epistemic state.

3. Three Types of Skepticism

Epistemologists are concerned with skepticism because it provides a challenge and methodological tool. Even if the skeptical conclusion seems incredible, the arguments can appear powerful and we gain by understanding and refuting or diffusing them. While we sometimes speak in terms of “the skeptic,” in reality there are a variety of skepticisms that pose quite different challenges. Here three deserve differentiation: high standards skepticism, Cartesian-style skepticism, and Pyrrhonism.

High standards skepticism imposes a high standard for knowledge and then argues it cannot be met. It is motivated by underdetermination problems. If I claim to know that the Red Sox won last night an underdetermination problem might be produced by pointing out that my only evidence is that I read it in the newspaper and it is possible that the newspaper is mistaken. Mistakes, after all, do happen. So do I really know? Perhaps not.

I am not absolutely certain of the challenged claim. I have all sorts of evidence that I am right and little reason to think that I am wrong: the newspaper is reputable and has not been wrong in the past, no one has mentioned the error, etc. Though my current evidence may have some lack, there are obvious and mundane ways to improve my evidence (phone the team, check other papers etc.), even if absolute certainty is unachievable. The high standards skeptic cleaves to this point – by bringing to light ways in which I might be wrong, despite my strong epistemic position, the skeptic argues I don’t really know anything. There have been high standards skeptics. Peter Unger once argued that ‘know’ like ‘flat’ is an absolute term and thus we do not know unless we are absolutely certain (just as nothing is really flat unless it is absolutely flat). Since we are never absolutely certain, we never know anything.⁸ Robert Fogelin uses high standards skepticism as part of his neo-Pyrrhonism. For Fogelin reflection on various potential defeaters raises the level of scrutiny. So if I am in my office, I know that I may exit through the door. But upon reflection I wonder if some mischievous pranksters have

⁸ Peter Unger, *Ignorance: A Case for Scepticism* (New York: Clarendon Press, 1975).

bricked up the door. Maybe I don't know. I can go check. But once I return the same problem arises. Even when I open the door perhaps I am still deceived by a clever replica of a vacant corridor. Fogelin isn't a high standards skeptic because this isn't the end of his skeptical story, but it is an important part of his argument.⁹

The high standards skeptic allows that we often possess very good evidence, but maintains that knowledge requires such strong evidence that it is never attained. Yet, we are still left with a myriad of epistemic distinctions and ordinary practice and inquiry isn't threatened.¹⁰ Nonetheless, the challenge is real—to vindicate knowledge we seem to either have to establish infallibility or develop a theory of knowledge that countenances fallibility. The former is unlikely to be successful. The later can be tricky.

A second sort of skepticism is Cartesian-style skepticism. When speaking of Cartesian-style skepticism I include a family of problems beyond Descartes' problem of the external world – including skepticism about other minds and skepticism about the past – that exploit a similar strategy. Each works as follows: a set of safe claims and a set of target claims are identified and it is the task of the anti-skeptic to bridge the gap between the two. The problem is that the gap is not easily bridged because, as the various skeptical scenarios show, the evidence in the safe claims underdetermines the target claims. In the problem of the external world we are given a set of safe claims, those about our appearances, and seek the target claims, those about the external world, but seemingly cannot bridge the gap because our appearances underdetermine the nature of the external world. Once the pattern is recognized, the problems proliferate.¹¹ If the safe zone includes only the current contents of our mind we seemingly do not know that anything beyond solipsism of the present moment. If the safe zone includes past events and the target zone is the course of the future we need to establish the uniformity of nature, but can do so only through the sort of argument we are trying to validate.

There have been no Cartesian-style skeptics. Descartes maintained that he had a solution and that the doubts he engendered were meant to be *once* gone

⁹ Fogelin, *Pyrrhonian Reflections*. Such reflections and variance in levels of scrutiny lead us to the epistemological project of a theory of justification. When this project fails, we suspend judgment and arrive at neo-Pyrrhonism.

¹⁰ See, for example, chapter one of Michael Williams, *Groundless Belief* (Princeton, NJ: Princeton University Press, 1999). Interestingly, Unger suggests something along these lines: one of his conclusions is that we should develop epistemic concepts other than knowledge.

¹¹ In this general account of Cartesian skepticism I am roughly following Williams, *Problems of Knowledge*, 75-77 and Michael Williams, *Unnatural Doubts: Epistemological Realism and the Basis of Scepticism* (Princeton, NJ: Princeton University Press, 1996), ch.2.

through in order to clearly apprehend the truth.¹² For Descartes skepticism is insulated and methodological, a project of pure inquiry. He creates skeptical problems in order to discern the correct method of inquiry and to purify our minds of confusion and error. This holds for most philosophers. There is no actual skeptic but rather a skeptical demon on the shoulder of the philosopher. The problem is that this demon does not seem to go away.

Though it may seem similar to high standards skepticism, Cartesian-style skepticism presents underdetermination problems of a different sort. An underdetermination problem functions by pointing out that one cannot rule out a possibility with the evidence one has. We usually have quite good evidence and could get more. In Cartesian-style scenarios, however, the defeater introduced is universal, producing a universal underdetermination problem. The shortcoming pointed out concerns one's evidence as a *whole*, not some definite lack within the evidence. This point is easy to miss, largely because Descartes introduces his investigations in terms of the quest for certainty. But even if we reject this quest, Cartesian-style skepticism remains. The quest for certainty clarifies our epistemic situation by showing us what the safe zone is, but once we have taken this step we are left without any way to say that one statement about the target zone is more likely than another.

Pyrrhonism as exemplified in the works of Sextus Empiricus is a third sort of skepticism. Pyrrhonism flourished in antiquity and had a notable revival in the early modern period. Sextus divides philosophers into three groups: those who claim to have discovered the truth, those who deny that the truth can be discovered, and those who are still looking. The first two groups are dogmatists and negative dogmatists respectively because they lay down the law as to the nature of things – claiming that they have apprehended it or that it is inapprehensible – whereas the Pyrrhonists are continuing inquiry while at present suspending judgment.¹³ Pyrrhonism is

an ability to set out oppositions among things which appear and are thought of in any way at all, an ability by which, because of the equipollence in the opposed objects and accounts, we come first to suspension of judgment and afterwards to tranquility.¹⁴

¹² Rene Descartes, *The Philosophical Writings of Descartes*, vol. III, trans. John Cottingham, Dugland Stoothoff, and Robert Murdoch (New York: Cambridge University Press, 1984), 228.

¹³ Sextus Empiricus, *Outlines of Scepticism*, ed. and trans. Julia Annas and Jonathan Barnes (New York: Cambridge University Press, 2000), I: 1-7.

¹⁴ Sextus, *Outlines*, I: 8.

They “oppose what appears to what appears, or what is thought of to what is thought of, or crosswise” as well as present things to present things or present things to past or future things.¹⁵ The skeptic acts as a doctor curing the disease of dogmatism, using a toolkit of skeptical arguments to induce suspension of judgment.

The skeptic uses several sets of modes, or general strategies, to construct oppositions. Sextus presents the ten modes of Aenesidemus (or the “older sceptics”), the five modes of Agrippa (or the “more recent sceptics”)¹⁶, the two modes, and the eight modes related to causal explanations. The ten and five are the most important – the two are a condensed version of the five and the eight specifically target causal explanations and are not used elsewhere.

The ten modes are a variety of strategies to produce oppositions related to appearances.¹⁷ In the first mode Sextus contrasts human and animal appearances, arguing that it is likely the animals have different appearances than we do. The question is always: whose appearances should decide how things are by nature? By bringing out conflicts, or likely conflicts, in appearances the skeptic hopes to induce suspension of judgment.

While the ten are awkward and cumbersome the five are simple and devastating: dispute, infinite regress, relativity, hypothesis, and reciprocity.¹⁸ The modes of regress, hypothesis, and reciprocity form what has been called Agrippa’s trilemma. Given any claim it seems proper that the claimant have some justification for or account of the claim in question. When presented with a justification one can thereby come to question that claim. As the process continues either the dogmatist will begin on an infinite regress, assert a justification that is not itself justified and is hence a mere hypothesis, or circle back on himself. When determining what to count as proper justification for a claim it seems one of these options must be vindicated, yet none seems particularly promising.

It is important to locate the trilemma within the five modes. Dispute and relativity give life to the trilemma in that they create the sorts of problems that would require further justification and cause trouble for theories of justification.¹⁹

¹⁵ Sextus, *Outlines*, I: 31-34.

¹⁶ Sextus does not attribute the five to Agrippa, see Diogenes Laertius, *Lives of the Eminent Philosophers*, trans. Robert Drew Hicks (Cambridge, MA: Harvard University Press, 1972), IX: 88.

¹⁷ Sextus, *Outlines*, I: 36-37.

¹⁸ Sextus, *Outlines*, I: 165-169.

¹⁹ Fogelin, *Pyrrhonian Reflections* classifies dispute and relativity as the challenging modes and the trilemma as the dialectical modes and R.J. Hankinson, *The Sceptics* (New York: Routledge, 1995), ch. 10 calls the trilemma the formal modes and the others the material modes.

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Moreover, each mode is a tool used whenever appropriate – there is no one skeptical argument. Dispute is powerful because it calls what may seem obvious into question. Regress can be used to force a dogmatist to establish some end to grounding. Relativity suggests that something that is asserted only has power relative to a particular situation or circumstances and is the natural place to incorporate the Ten Modes. Hypothesis challenges dogmatists when they attempt to simply baldly assert a grounding that is itself open to question. And reciprocity challenges forms of argument that are self-sealing or are claimed to be self-vindicating in some way.

Pyrrhonism differs from modern forms of skepticism in a number of ways. First, modern skepticism is based on particular arguments whereas Pyrrhonism is not an argument but a method of constructing arguments in context. Second, Pyrrhonism is meant to be livable whereas Cartesian-style skepticism is confined to the study. The Pyrrhonist has no beliefs as to how things are by nature and yet reports that he is able to live by criteria of action. The Pyrrhonist's doubts do not fade in life; rather he finds that beliefs as to how things are by nature are not required. He simply acts naturally, without such beliefs.

Third, modern skepticism is an antecedent skepticism. It is conceptually prior to other inquiry. Responding to the skeptic through epistemology, then, is a project that is conceptually prior to all other inquiry. Pyrrhonism claims no special place for epistemology. It is consequent to other inquiry. The Pyrrhonist starts out inquiring and is led to suspension of judgment. He may turn to epistemology because of problems that arise, but finds that epistemologists are of little help and is led to suspension of judgment.

Finally, modern skepticism is knowledge-focused. It allows that we have all sorts of beliefs only aims to show that these beliefs do not amount to knowledge. The high standards skeptic allows we have all sorts of great reasons for our beliefs but insists they can never be good enough. There is no pressure to abandon our beliefs. Cartesian-style skepticism begins with our beliefs and abstracts from life in order to challenge them all at once. There is no real suggestion that we should stop believing, rather we are led into an epistemological paradigm in which securing knowledge appears impossible. Pyrrhonism targets belief. The Pyrrhonist reports that he stops having beliefs about how things are by nature by practicing his skeptical ability. The background question is not "What do I really know?" but "What ought I believe?"

4. High Standards Skepticism and Externalism

The externalist makes quick work of high standards skepticism. It relies on the premise that in order to know one must have justification that can be dialectically marshaled to eliminate all possible defeaters. The externalist rejects this premise. If the implausible scenario doesn't hold and if the external conditions are met then I know even if I can't disprove the proffered defeater. That defeater is eliminated, so to speak, by the external condition.

The lesson, if any, is that we are wrong to rely so much on justification in epistemology. The high standards skeptic demonstrates that our justification just can't ever be good enough. So maybe justification ought to be looked on with a wary eye. Since the skeptical conclusion is implausible and absolute certainty is unattainable we ought to adopt an externalism that doesn't let this skeptic get his argument off the ground.²⁰

But do we really need externalism for this point? The high standards skeptic claims that we can never be absolutely certain and thus can't know. The externalist replies by jettisoning the justification requirement. But surely this is more than is necessary to respond to *this* skeptic. We can just be fallibilists. Knowledge requires justification but our justification need not strictly or logically eliminate all possible defeaters. Rather it need only rationally eliminate them. It is possible to be both justified and incorrect. My door could be bricked over even though I am justified in believing it isn't. Do I know it is not? That depends on the fact of the matter. If it is then I am justified in believing that it isn't but I don't know because my belief isn't true.

We do have intuitions that the high standards skeptic exploits that suggest simple fallibilism doesn't work. The skeptic can dwell on a possibility in order to make it appear salient or relevant and hence lead me to disclaim knowledge. What is going on here, I think, is that we are actively considering the possibility that our justified belief is false and disclaim knowledge because we question the truth condition. But just because we can become confused about the sort of justification we need by idle philosophical musings does not mean that such a confused state is correct. We have infallibilist intuitions at times, but these are misguided.

An infallibilist may point out that it is odd to say that "I know but I might be wrong." And indeed it is odd. If I know then I can't be wrong because if I'm

²⁰ If we accept the high standards skeptic's view of justification, Gettier problems disappear. Gettier cases exploit a gap between truth and justification just like high standards skeptical scenarios do. They then posit that the belief just so happens to be true as well. But if justification requires absolute certainty, the JTB account is not challenged by Gettier cases – they are just instances in which the believer has good reason but is not justified.

wrong then my belief isn't true and that condition isn't met. But if I'm right and justified, though my justification doesn't absolutely ensure that I am right, then I'm lucky, in a sense, and know. We are fallibilist about justification, not knowledge. If one knows then one can't be wrong. But this point comes from the truth condition, not the justification condition. A fallibilist holds that one can attain the sort of justification needed for knowledge and yet be wrong and so not know. But one can properly claim to know and be wrong. There is no paradoxical assertion that one can both know and be wrong. Knowledge is factive.

It also seems odd to say "I'm justified in believing P but P is false." But this is odd a different way. The situation itself isn't perplexing – there may be a good many things I'm justified in believing but am wrong about. What is perplexing is not the state of affairs but my *saying of* such a state of affairs that it obtains. In saying this I'm both asserting and disclaiming entitlement. I can be justified in believing falsehoods. But I'm not entitled to believe things I say are false, and yet that is what I have done. The statement is odd in the same way "It's raining but I don't believe it is" is odd.²¹

As Austin argued, claiming knowledge is like "taking a plunge."²² It is like promising – one stakes oneself to a matter of fact that is beyond one's control. I cannot be fully certain that my beliefs are true, yet I can properly claim to know them. In doing so I am staking myself to the claims, and depend on the absence of bad luck in how things are. If indeed I know, I cannot be wrong, but in order to know, I need not be absolutely certain that I am correct. Infallibilist intuitions are the product of the truth condition and once we are clear about this, a sensible fallibilism suffices to reply to the high standards skeptic.

5. Cartesian-style Skepticism and Externalism

Externalism, then, isn't necessary for a straightforward answer to high standards skepticism. Cartesian-style skepticism, however, is a different matter. The two can appear similar, but there are key differences. The high standards skeptic relies on a specific lack in our epistemic situation to challenge our knowledge. The Cartesian-style skeptic maneuvers us into a position where our epistemic situation as a whole is undermined. Given the safe zone of a moment's appearances there seems to be no way to move to the target zone of knowledge of the external world, other minds, the course of the future, or the existence of the past.

²¹ G.E. Moore, "Moore's Paradox," in *G. E. Moore: Selected Writings*, ed. Thomas Baldwin (New York: Routledge, 1993), 207-212.

²² J.L. Austin, "Other Minds," in *Philosophical Papers*, 3rd ed., ed. J.O. Urmson and G.J. Warnock (New York: Oxford University Press, 1979), 76-116.

Interestingly, the externalist's response to the Cartesian-style skeptic is the same as his response to the high standards skeptic. I wonder if I know there is an external world. The skeptic points out that all I really have is appearances, mediated access to the external world – if there is even such a world at all. How can I show that these appearances are a good guide to reality? Any evidence I could marshal is also based on my appearances. Once inside the safe zone there is no basis for an inference to a target zone – everything is subject to the same questioning. Reflecting I come to doubt whether I have a body or a brain, as these are external in the relevant sense as well. My supposed epistemic situation is reduced to nothing – either I have no basis for belief in and beliefs about the world or I define it in terms of appearances.

The externalist responds by saying that I am confused about knowledge. In order to have knowledge of the external world I don't need justification of the sort challenged by the skeptic. Rather I need a true belief coupled with an external factor, such as a reliable belief forming mechanism. So I know there is an external world if, in fact, there is an external world and my belief was caused by a reliable belief forming mechanism. I needn't be able to show that I'm correct or that the relevant belief forming mechanism is reliable. The externalist's point is that *if* these conditions are met then I know. This refutation does not engage the skeptic heads-on. The externalist doesn't reject the limitations of our evidence or the skeptic's claim that from our evidence we cannot show that there is an external world that we know a good many things about. Instead the externalist tells us that the skeptic is wrong to focus on arguments.

This works, so far as it goes. The response seems to be that we can forget about the skeptic because for all we can tell we might know. The skeptic is making the same point: for all we can tell we don't know. Such a response is bound to be somewhat unsatisfying. It *does* rescue "knowledge" from the skeptic (if the skeptic is wrong) but only by forfeiting grasp of our knowledge. This isn't what we are after when we engage in inquiry, and certainly isn't what we are after in doing epistemology. We want to be able to *show* that the skeptic is wrong, but the externalist gives us assurances that *if* the skeptic is wrong then we know a great deal.²³

²³ Dissatisfaction with the pure externalist response and its conditional nature is widespread; see, for example: Barry Stroud, "Understanding Human Knowledge in General," in *Knowledge and Scepticism*, ed. Marjorie Clay and Keith Lehrer (Boulder: Westview Press, 1989), 31-50, Fogelin, *Pyrrhonian Reflections*, and Laurence Bonjour, "The Indispensability of Internalism," *Philosophical Topics* 29 (2001): 47-66.

If this response to Cartesian-style skepticism is so unsatisfying, then why can it appear attractive? The answer is a conflation of high standards and Cartesian-style skepticism. The scenarios posited by both seem fantastic and so are treated together. But they are quite different. High standards skepticism challenges a definite lack in our epistemic situation while Cartesian style skepticism challenges our epistemic situation as a whole. They may both seem fantastic, but we can show that high standards scenarios are extremely unlikely but cannot do so for Cartesian-style scenarios. A simple fallibilism suffices to turn aside the high standards skeptic, but does not work for Cartesian-style skepticism because it calls everything into question.

The confusion is created by scenarios like the brain in the vat that can be viewed in both ways. Suppose there is a group of brilliant, deranged neuroscientists who have developed the ability to place brains in a vat of fluid and feed them input to mimic reality. If there were such a group how do you know that you weren't kidnapped last night in your sleep and are now just a brain in a vat? And how do you know there isn't really such a group?

Read in a high standards way we treat this like the imaginary pranksters who brick up doors. Such a thing has not been known to happen, I would have heard the scientists, and the technology required is implausible. The scenario is fantastic in the sense of unlikely. Sure, I can't achieve absolute certainty on the matter just as I can't be absolutely certain that some pranksters haven't just bricked over my door. But I don't need absolute certainty to be justified.

But the brain in the vat scenario can also be treated as a Cartesian-style scenario – we posit that the scientists in question can control everything, including memories of the past and future appearances. If the scenario is read to challenge all of this then we have a universal defeater and are dealing with Cartesian-style skepticism. Whereas the possibility of the pranksters exploits a local lack in my epistemic situation, the possibility of these scientists can challenge my epistemic situation globally.

We must not forget just how radical such scenarios really are. It is not just the possibility that we are in the Matrix – after all it is somewhat fortuitous that Neo looks remarkably like Keanu Reeves both while in the Matrix and after he is “unplugged” from it. At an extreme there is no reason to believe we have a body or a brain or there are such things as vats. Brain in a vat and Matrix scenarios lead us down the road to Cartesian-style skepticism by telling a story that appears incredibly implausible. But as we travel down the skeptical rabbit hole we find ourselves with a different sort of doubt because everything has been called into question. The skepticism in play isolates a safe zone using the universal defeater

and then exploits our lack of warrant for any inference to the target zone once we are forced to retreat.

If we treat high standards and Cartesian-style scenarios as similar then we will seek a unified solution. If we want a unified solution a simple fallibilism about justification won't do because it can't deal with Cartesian-style scenarios. But externalism can because it discards accessible justification. And it offers a response to the high standards skeptic as well. We conclude that externalism offers a plausible response to skepticism sans phrase.

But once we decouple high standards and Cartesian-style skepticism things are less satisfying. Externalism is more than necessary for a response to high standards skepticism. Fallibilism does the same work without jettisoning justification – which seems right since we have great justification, just not the sort of justification that is absurdly demanded. And focusing on externalism's response to the Cartesian-style skeptic we are left unsatisfied, not because it doesn't work but because it works too well, abandoning the field entirely to the skeptic only to declare victory on different ground and thereby detaching us, as conscious beings who give reasons and arguments, from our newly reconstructed epistemic situation in which we do end up, we hope, knowing a great many things.

Nonetheless we have reached a sort of impasse. The pure externalist "refutes" the Cartesian-style skeptic by changing the conversation. We are left somewhat unsatisfied and the skeptic is unimpressed, but the externalist can retort that we are just clinging to an old, unproductive paradigm. We find in this impasse the well-rehearsed clash between externalists and internalists. Externalists offer an analysis of knowledge and internalists insist that something is missing, citing the somewhat lame response to Cartesian-style skepticism. The externalist responds by rejecting the felt need for something more, noting that internalists don't have this something more ready to hand and so it is either externalism or skepticism, and externalism seems much more sensible. The debate degenerates into internalists accusing externalist of abandoning justification in the sense of responsibility and the externalist retorting that of course this is what they are doing. The charge is simply that externalists are not internalists, but we knew that much already. The skeptical arguments are avoided by externalism, but in a way that leaves something wanting. We are left with little engagement, instead noting two different projects, each pursuing a different sort of epistemological inquiry.

6. Pyrrhonism and Externalism

Is there anything more to be said on the matter? Can we discern exactly what is deficient about externalism in a way that engages it? Pyrrhonism provides

answers. Agrippa's five modes can be used to construct a trilemma relating to justification. When we ask for a justification we set off on a chain of justifications that ends in hypothesis, circularity, or infinite regress. Traditional epistemologists attempt to vindicate one of these modes. A pure externalist, perhaps noting the dim track record of traditional epistemology, instead holds that justification of this sort is inessential, depriving the modes of their power. As with the responses above, this response is quick. The externalist simply refuses to engage because he isn't in the game of giving reasons for beliefs as a way to vindicate them from skeptical attack. His game is to discard that felt need. The same impasse emerges – the Pyrrhonist demands reasons for the epistemic standing needed for knowledge while the externalist rejects this presupposition. The externalist doesn't try to vindicate one of the modes in the standard way, instead asserting that, for example, brute, inaccessible reliability suffices. As accessibility isn't necessary, the demand for reasons on the part of the Pyrrhonist falls on deaf ears.

Sextus, however, can be and has been used to make a more direct critique of externalism.²⁴ Externalism, in fact, is not wholly foreign to ancient philosophy.²⁵ Sextus provides an opposition:

For if we were to imagine some people looking for gold in a dark room containing many valuables, it will happen that each of them, seizing one of the objects lying in the room, will believe he has taken hold of the gold, yet none of them will be sure that he has encountered the gold – even if it turns out he absolutely has encountered it. And so, too, into this universe, as into a large house, a crowd of philosophers has passed on the search for the truth, and the person who seizes it probably does not trust that he was on target.²⁶

Later he likens inquirers to archers firing at a target in the dark. Perhaps one has hit the target, but no one is in a position to responsibly claim to have done so. As such it seems that each archer would suspend judgment as to whether he hit the target.²⁷ The externalist puts us in positions like those looking for gold and the archers. In such cases if someone proclaimed success we would find something

²⁴ Ernest Sosa, "How to Resolve the Pyrrhonian Problematic: A Lesson From Descartes," *Philosophical Studies* 85 (1997): 229-249.

²⁵ Jonathan Barnes, *The Toils of Scepticism* (New York: Cambridge University Press, 1990), 132ff. reads Galen's epistemology as akin to externalism and Julia Annas, "Stoic Epistemology," in *Companions to Ancient Thought: Epistemology*, ed. Stephen Everson (New York: Cambridge University Press, 1990), 184-203 reconstructs Stoic response to Academic critique of the cognitive impression as externalist.

²⁶ Sextus Empiricus, *Against the Logicians*, ed. and trans. Richard Bett (New York: Cambridge University Press, 2005), II: 52.

²⁷ Sextus, *Against the Logicians*, II: 325.

deficient and lacking. In the same way there is something lacking from externalist knowledge, a sort of epistemic responsibility or perspective on one's epistemic situation. The Pyrrhonian analogies, if apt, illustrate how externalist knowledge is deficient.

John Greco responds to this critique using a version of agent reliabilism.²⁸ He reconstructs what he calls the Pyrrhonist's reasoning as follows:

1. Knowledge is success for which the agent deserves credit.
2. True belief without a perspective is relevantly like grasping gold in the dark: it is mere lucky success for which the agent does not deserve credit.

Therefore,

3. True belief without a perspective does not qualify as knowledge.

Greco rejects the second premise, holding instead that absent a perspective an agent still deserves credit if he believes the truth because of intellectual virtues he possesses, which on his analysis are reliable belief forming processes intrinsic to an agent's cognitive character. Such an agent is lucky in the way a talented athlete is lucky to have natural gifts, but not lucky in the deployment of those intellectual virtues and still deserves credit. A talented basketball player is lucky to have the natural talent he does, but when he makes a three point shot we do not say he was lucky; rather we view it as a creditable deployment of his shooting ability. The point is not just that he scores – after all I could happen to hit the same shot despite my inability – it is that he made a good, rather than lucky, shot. Luck and credit can co-exist, luck in the possession of naturally virtuous abilities and credit in deployment of those abilities. So in the gold example, the grasper isn't like someone who just so happens to pick out the gold. Rather she has an intrinsic ability to grasp the gold, so to speak, and lacks only a reflective perspective on this ability. As an *agent* reliabilism, the feature that produces the true belief is part of one's cognitive character and hence not external to the agent. It is external only in the sense of this paper – its virtuosity is not reflectively accessible.²⁹

The impasse returns. The Pyrrhonist, with the internalist, asks that in order for an epistemic agent to have credit sufficient to attain knowledge there must be some accessible justification. Greco argues that the exercise of reliable faculties

²⁸ John Greco, "Virtue, Luck and the Pyrrhonian Problematic," *Philosophical Studies* 130 (2006): 9-34.

²⁹ This eliminates counterexamples like Mr. Truetemp (Keith Lehrer, *Theory of Knowledge*, 2nd ed. (Boulder: Westview Press, 2000)) and perhaps the reliable clairvoyant (Laurence Bonjour, "Externalist Theories of Knowledge," *Midwest Studies in Philosophy* 5 (1980): 53-73), depending upon how the agent is defined

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can deserve credit despite luck, while the Pyrrhonist and internalist counter that this won't be the right kind of credit. We end up back with a bare assertion that responsibility is required and the externalist bare denial of this.

The way out of this impasse is to pay careful attention to the actual Pyrrhonist. Above the Pyrrhonist is presented as engaged in the project of discerning necessary and sufficient conditions for knowledge, and so it is to be expected that those arguments lead back to the impasse. But Greco's framing is foreign to Pyrrhonism. The Pyrrhonist has no analysis of knowledge and doesn't attach himself to premises. The Pyrrhonist would be in trouble if he held premises at all, not just faulty ones. The Pyrrhonist merely engages in inquiry as naturally led to, using his intellectual faculties and the positions of others. Greco's reasoning captures views held by hybrid epistemologists like Sosa and internalists like Bonjour, and these seem to be his real targets. That is fine, but we must be clear when thinking about Pyrrhonism that they aren't parties to this particular debate and don't approach externalism from it.

Pyrrhonism operates within the process of inquiry, not as a separate, abstract epistemological enterprise. This highlights an oddity about externalism – when conducting inquiry we look for reasons and the externalist seems to simply quit playing that game while declaring victory. Even so, there are interesting questions about reasons and accounts that remain if we accept pure externalism. When we engage in inquiry – whether it be formal academic inquiry or everyday inquiry into a claim – we give accounts and ask for reasons and if we become confused look for help, ways to decide disputes or clarify issues. The externalist, however, provides an epistemology that deems account giving of this sort unnecessary. The externalist appears to be pulling a fast one – abstracting epistemology from the practice of inquiry, defining problems away, and then proclaiming that he has answered the skeptic and rescued inquiry. Much, however, has been lost in this supposed rescue.

Imagine a biology conference at which a presenter makes a claim to know. Challenged the presenter chides the questioner: knowledge does not require an account or such justification. We are interested in gaining biological knowledge and he need not justify or explain – obviously the questioner has not been following trends in epistemology. Rather certain external factors must be met and, though he cannot show that they are, if they are he knows. Such a presenter would not be very impressive. Inquiry is concerned with giving accounts. The pure externalist may have isolated an interesting concept but this does not invalidate the importance of justification and epistemic responsibility. A

Pyrrhonist is unimpressed with the move, as is one who is engaged in critical inquiry.

An externalist might allow that accounts and justifications are quite nice and he does not mean to disparage them – rather he is engaged in a particular project regarding knowledge and refuting skepticism. Ordinary reason and account giving can go on, buffeted by an externalist account of knowledge in the background that keeps the skeptics at bay. Whenever we run out of reasons we can just make our externalist move. This is a neat trick, though we should be wary of how easily it can be used.

Pyrrhonism, however, does not fall prey to this response. Against the skeptic the externalist urges that grasp of the known is not necessary. This may suffice against negative dogmatism, denial of knowledge, because it undermines the rationale for the skeptical conclusion. But it is equivalent to where the Pyrrhonist, who draws no such conclusion about knowledge, finds himself. We have a conditional and cannot ascertain the truth of the antecedent. The negative dogmatist claims that this shows we do not know, the externalist asserts that our grasp of the truth of antecedent is immaterial to the fact of the matter about knowledge. The Pyrrhonist is candid here and suspends judgment.³⁰ The difference between the externalist and Pyrrhonist is their reaction to the situation the externalist posits – one in which we lack accessible justification for a candidate belief but may, or may not, arrive at such a belief virtuously. The externalist believes, pinning his epistemic status on the fact of the matter inaccessible to him while the Pyrrhonist suspends judgment.

Suspension of judgment is the absence of belief, not a denial of knowledge. Pyrrhonism targets belief, not knowledge, at least in part because to target knowledge and force their conclusions on others they would need a definition of knowledge that they could use to deny other's this standing. This is where externalism is able to slip other forms of skepticism, by finding what is being exploited by the skeptic and then jettisoning that in favor of something else that is not targeted. We are left feeling that we have lost something – because we have – but skepticism is diffused and the externalist provides something else. Pyrrhonism, properly understood, avoids this move because it begins in the process of inquiry and reports that through arguments Pyrrhonists end up suspending judgment. It doesn't strike them that dogmatists are entitled to their beliefs, but they are not in

³⁰ For a similar, brief argument see Robert Fogelin, "The Skeptics Are Coming! The Skeptics Are Coming!" in *Pyrrhonian Skepticism*, ed. Walter Sinnott-Armstrong (New York: Oxford University Press, 2004), 161-173.

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the business of telling them they ought to be Pyrrhonists. All they can rely on is their natural epistemic practices.

The force of Pyrrhonism on this point is that we tend to share these practices. On reflection, the pure externalist is only entitled to the claim that so far as we can tell we know. By making a crucial condition of knowledge entirely inaccessible to the knower we are left wondering on reflection whether or not the condition is met. Now we may on occasion know that it is, but in these cases externalism isn't doing the work. When we do not have access the externalist claims that we still know if the condition is met, but the Pyrrhonist replies that in such cases she is led to the suspension of judgment. If we have no idea whether the condition is met it is unclear why we would continue to believe.

But isn't this just the same point the internalist makes, demanding responsibility? The externalist response here is just to rebuff the demand, looking to reliability and disposing of the felt need. The internalist and Pyrrhonist are making similar points, but there is one crucial difference. The Pyrrhonist is not engaged of a project of defining knowledge and isn't telling the externalist that knowledge requires responsibility and so reliability alone is insufficient. Rather her point is that if she puts herself in the situation that externalist deems sufficient for knowledge but without any sort of accessible justification she finds that she suspends judgment. And she is inclined to think that most people sincerely engaged in inquiry will do so as well in such a position, at least once it is made clear to them.

The difference between pure externalism and Pyrrhonism is that the pure externalist tries to avoid the epistemic importance of responsible belief altogether while the Pyrrhonist naturally finds herself suspending judgment when there is no reason to believe. Externalists tend to assume that the subject believes in the cases they are interested in. But if we look at them closely, this is not trivial. If we have no reason to believe one way or another it is quite natural to suspend belief, at least when this is made explicit.

Take the chicken sexer. Here the person is able to reliably discern the sex of a baby chick. If asked how she is able to do this the chicken sexer often replies that she sees the difference. But the best evidence suggests that they actually rely on olfactory cues. Pointing to the phenomenon the pure externalist argues that knowledge does not require any justification. In the imagined scenario, however, a crucial piece of information has been left out: whether or not the chicken sexer is privy to her reliability. If she is then she has accessible justification and the case does not motivate pure externalism. In order to work for the pure externalist we must imagine that the chicken sexer has no idea she is reliable, e.g. one just

starting out but who is already reliable. Faced with a baby chick is it natural to think that she would believe the sex of the chick? No, it is much more natural to imagine her suspending judgment. We might force her to answer or introduce some cognitive defect that leads to a belief, but then we are departing from normal circumstances. The natural result is the suspension of judgment. Actual chicken sexers don't suspend judgment because they believe they are reliable, even if they are unclear as to the exact mechanism.

Consider blindsight. In these cases subjects who are blind are able to reliably discriminate shapes and colors. They have no reason to think that they can do this, but nonetheless have this ability. The pure externalist submits that they know. But again the problem is with belief. As Robert Brandom points out, in cases of blindsight the subject does not generally believe that there is, say, a red square in front of him or her and the tester must *force* him or her to guess.³¹ To get around this we might introduce a superblindsighted person, someone who is both reliable and also has an overwhelming urge to believe even though there is no accessible reason for his belief. This would be an example for the pure externalist, but such cases are contrived and odd. There are no superblindsighted people and in order to imagine one we introduce some cognitive defect that compels belief. But it is a *defect* that leads to belief, an unnatural sub-personal mechanism forces belief. The natural response is to suspend judgment.

These cases are tricky because they trade on *our* perspective. The person in question is reliable and we have good reason to believe this. From our perspective the reports naturally lead us to belief and knowledge. But the crucial aspect of the cases is that our perspective and the subject's perspective differ a great deal. The subject does not have any reason to believe she is reliable. This is what seems to motivate pure externalism. But if we clearly distinguish the perspectives and ask ourselves what each will naturally believe, the flaw in pure externalism is apparent.

The proper lesson of the Pyrrhonian analogies is that one might very well have grasped the gold, hit the target, or discerned the truth but since one doesn't have good reason to believe this suspension of judgment is natural. Even if we grant the pure externalist's analysis of knowledge, belief is the problem. Externalists tend to assume belief and then look for things to add to get knowledge. This is how it can maneuver around skepticism. From a Pyrrhonian perspective the issue is not whether abstractly we might credit the grasper of gold, archer, or person with a belief who happen to be reliability, though they have no

³¹ Robert B. Brandom, "Insights and Blindspots of Reliabilism," in *Articulating Reasons: An Introduction to Inferentialism* (Cambridge, MA: Harvard University Press, 2000), 102-105.

reason to believe this. The question is whether or not we would claim to have grasped the gold, or if we would claim to have hit the target, or if we would form or retain beliefs once our epistemic situation is made clear. The analogies are illustrations of our epistemic situation as the externalist describes it, at least in the parts where the externalism does the anti-skeptical work. In the mouth of the Pyrrhonist they aren't meant to show that externalist's are missing something in their definition of knowledge or leave us lacking accessible justification. We already knew the latter and the former doesn't produce an enlightening debate. Rather they are meant to suggest that the natural response as a subject in such a situation is to, like the skeptic, suspend judgment.

What of Greco's argument? A basketball player is lucky to have athletic talents, but when he makes a three pointer after exercising those talents in appropriate circumstances we credit him with a virtuous performance. By analogy we may be lucky to have reliable intellectual faculties, but when we exercise them in appropriate circumstances we deserve credit for our virtuous epistemic performance. But in the basketball example we also can tell he scored and that he has athletic virtues. We can state that, in fact, his athletic abilities are quite good and were exercised successfully on this occasion. So can he – he has a reflective perspective on his performance. He, and we, can confidently state that it was a good shot and take and give credit for the shot because of our understanding of the situation.

The position the externalist places us in is quite different. We don't have a clear idea that our intellectual faculties are reliable and that they were exercised successfully. If we had a clear idea of this then the internalist would be satisfied. And we would also have a ready answer to the skeptic. But this is just what the externalist is doing without. We must be careful about shifting perspectives on this point – when *we* argue about externalism we posit that the belief is true and that the external condition is met. As such, we have the perspective internalists and hybrid epistemologists require. But it is better to put ourselves in the shoes of the posited agent.

To return to the basketball analogy, we are in a position where we can't really tell if the shots go in and aren't sure whether or not the shooter has athletic talents. The shooter has no clue either and there is no need to take the shot. Should he be shooting? Probably not, as it would be irresponsible to shoot and proclaim that it went in. In the same way, lacking a sense of whether or not my archery skills are developed, I shouldn't be proclaiming that my shots hit the mark. And while if I possess a gold-finding ability I deserve some credit for grasping the gold, I ought not go around proclaiming I've grasped the gold absent

any perspective on my ability. In the same way, absent a perspective on my intellectual faculties, I shouldn't assert their virtuosity and form or retain beliefs on their basis.

The issue is not the abstract question of whether the shooter or believer deserves some sort of credit but rather whether as such a shooter or believer we would and should shoot or continue to believe. I engage in inquiry and find myself entertaining various beliefs and want to discern what I ought to believe. I don't have a perspective on my epistemic situation, that is, whether or not the processes I can use to arrive at belief are in fact virtuous. The externalist tells me this is no problem – they are *my* belief forming processes and so if I trust them and if they turn out to be virtuous then I know. That is all well and good, but why should I place trust in those faculties? It doesn't help that they are my faculties here. I may have an ability to arrive at what turns out to be the truth, but if I don't have any sense of whether or not this is the case, I'm led to suspension of judgment.

Within the Five Modes the externalist vindicates hypothesis, in a way, by allowing that particular beliefs gain positive epistemic status because of a property that may be inaccessible to the subject. The Pyrrhonist, I've argued, can stress that for the subject this is still a mere hypothesis. But we should also be wary about how easy the externalist's move is. We can't tell which belief forming processes are virtuous and hence it is possible, and quite probably, that different inquirers will deem different processes virtuous. This leads to dispute about which processes deserve the privilege. Even if I think that whomever has cleaved onto virtuous belief forming processes deserves some credit, there is a good deal of dispute over which processes these are. Deciding disputes about differing externalist criteria of truth would mean further inquiry and account giving, but this is just the sort of process the externalist deems unnecessary. Left, then, in the epistemic situation the externalist describes, suspension of judgment is natural.

Contemporary epistemology tends to assume a subject with a set of beliefs beyond skeptical threat – skepticism only threatens knowledge, and this is how the Pyrrhonian analogies have been transposed. But actual Pyrrhonism opens a new dimension. As we engage in inquiry generally and epistemology in particular, what are we led to believe? Pyrrhonism relies only on natural epistemic pressures on belief, not a particular theory of knowledge. Its power derives from the natural progression of rational inquiry, and vis-à-vis the externalist the point is that in the epistemic situation as *they* describe it we tend to suspend judgment. If we assume belief and see the task of epistemology as moving from belief to knowledge, Greco's move can seem attractive because I do deserve credit, in some sense, for

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virtues that I possess even if I am lucky, in another sense, to possess them. But this isn't the point of the Pyrrhonian opposition.

The externalist provides a particular conception of our epistemic situation in which we have knowledge without a perspective, without accessible justifications for some of the things we know. The internalist argues that something is wanting in this definition of knowledge and the Cartesian-style skeptic argues that such a person doesn't know. The impasse develops because the externalist just says, "So what?" making the point that the internalist and skeptic don't have so much of an argument as a bald accusation. Pyrrhonism – actual Pyrrhonism – returns the favor: as we put ourselves in the situation of the subject possessing externalist knowledge the reply is "So what?" as it is entirely unclear why we would continue to believe in such a situation. In doing so it engages externalism from a different and more revealing angle.

7. Conclusion

This paper has defined externalism and then analyzed it in terms of skepticism. Externalism denies accessibility and thereby has quick responses to skepticism. I have argued, however, that externalism is a disappointing and misguided response. Once we decouple high standards and Cartesian-style skepticism externalism is unnecessary to respond to the first and unsatisfying as a response to the second. Exactly what is deficient about externalism becomes clear when it is analyzed as a reply to Pyrrhonism. The externalist changes the terrain when confronted with a skeptic by adopting a definition of knowledge that rejects the need for the sorts of reasons the skeptic demands. But with the Pyrrhonist this does not work – the Pyrrhonist pushes us to abandon belief and cannot be avoided in this way. And when we are clear about the position the externalist puts us in, suspension of judgment is a natural response.

But what of those who don't suspend judgment, who have vast theories about the nature of things immune to inquiry? Belief can float free from justification. It need not be defended, and that is why modern epistemology concerns itself with what status or property mere belief must have to be knowledge. People who believe independent of inquiry seem to resist Pyrrhonism because they don't suspend judgment. They retain belief, proclaiming to have hit the target, and the externalist affords them knowledge if, in fact, they have hit the target.

But what of it? Pyrrhonism isn't for everyone and the Pyrrhonist has no interest in making people suspend judgment. Pyrrhonism is for "men of talent"

and for those who engage in inquiry.³² It doesn't target the practices of people going about daily business. Pyrrhonism emerges from the practice of inquiry. If belief isn't responsive to reason and argument, then there is little more to say on the matter. Proclaiming your belief immune to reason is not a refutation of skepticism. A Pyrrhonist can note that such people behave differently – they cling to hypotheses at points and do not respond to argument, often leading to undecidable disputes amongst themselves. There is no need to, or point in, showing that such people are wrong. What could such a showing look like? Reasons have given out. Should he believe? We think not, insofar as we are in a project of inquiry that is rational and critical. But we can't force him to adhere to such a project.

And perhaps this is where externalism is leading, acceptance of belief beyond reason coupled with a move to privilege some beliefs over others based on what are presumed, but cannot be shown, to be epistemic virtues. If so, there is an interesting historical parallel.

Pyrrhonism enjoyed a long-running revival in the early-modern period that has been described in great detail in the work of Richard Popkin.³³ In this period some used Pyrrhonism as a *defense* of religious faith.³⁴ The discussion above should make clear why this was an attractive option. Pyrrhonism is a leveler; it leads us to suspension of judgment by undermining the pretensions of critical rational inquiry. In an intellectual climate, like post-reformation religious argument, that is prone to seemingly unending disputes, Pyrrhonism is an attractive (and humane) response. With the field leveled, faith, scripture, an inner light, or tradition can swoop in and save belief. Such a position is not Pyrrhonist because belief remains. But Pyrrhonism can be used as a powerful tool within this sort of fideism.

In ways this position resembles the externalism discussed in this paper. Accessible justification is rejected and instead belief is grounded beyond critical inquiry, in epistemic virtues that cannot be defended. We may choose our source of belief (tradition, faith, science, whim, etc.) and privilege it with our externalism. While externalism cast in this light is by no means skepticism, it need

³² Sextus, *Outlines*, I: 12.

³³ E.g. Richard H. Popkin, *The History of Scepticism: From Savonarola to Bayle* (New York: Oxford University Press, 2003).

³⁴ For an example of how this can work, see Michel de Montaigne, "Apology for Raimond de Sebonde," in *The Essays*, ed. W. Carew Hazlitt, trans. Charles Cotton (Chicago: Encyclopedia Britannica Inc., 1952), 208-293.

not oppose the Pyrrhonist. It only adds a layer. Belief is retained, knowledge is rescued, but the loss is our access to our epistemic situation as active inquirers.

This is not a refutation of externalism or a vindication of internalism. Rather I hope to show through Pyrrhonism why externalism seems insufficient and what it is giving up. The impasse between externalists and Cartesian-style skeptics develops because the skeptic targets the justification condition for knowledge that the externalist rejects, leaving the two talking past each other because they are working in different epistemological paradigms. The same impasse develops between internalists and externalists. Pyrrhonism brings a new perspective to externalism because it comes at epistemology from another angle. From the perspective of the Pyrrhonist, the question for externalism is this: as inquirers if we place ourselves in the epistemic situation the externalist posits, would and should we continue to believe? The Pyrrhonian analogies coupled with careful analysis of the position of the subject in externalism's conception of our epistemic situation suggest that we ought not to continue to believe and that as inquirers we won't. But maybe not, the Pyrrhonist isn't in the game of forcing us not to believe – all he needs for a powerful skeptical challenge is a natural tendency to suspend judgment in such a situation, and this I've argued he has. Some will go on believing no matter what and can use externalist epistemology as a buttress.

The question, then, is if we are externalists and continue to believe, what are we giving up about inquiry? What follows from this and are we willing to accept those consequences? And if we find ourselves suspending judgment when placed in the externalist's view of our epistemic situation, the terrain in epistemology shifts in interesting ways. Instead of debating conditions for knowledge we can ask what would need to be added in order for us to naturally believe, to be struck that we ought to believe. If we retain belief, when and why do we do so? What can be added to an externalist account to explain how we ought to behave epistemically? When are we entitled by default or justified based on a status rather than a claim? There is much room for development here, whether it is in hybrid epistemologies or in diffusions of skepticism through default entitlements.³⁵ But if we take Pyrrhonism seriously the questions ought to be approached through an analysis of the process of inquiry and epistemic practices related to belief. The questions would be how we do and can better go about inquiry, when we are led to belief through inquiry, and when suspension of judgment might be appropriate. The Pyrrhonian challenge isn't to be met in

³⁵ Ernest Sosa, Susan Haack, and Robert Fogelin all present versions of the former, Michael Williams has advocated approaches to skepticism based on default entitlements.

abstract musings about conditions of knowledge but by working to produce an understanding of our epistemic situation in which belief naturally follows from inquiry and can be defended.

That task is beyond the scope of this paper – here I hope to have shown how we should understand epistemological externalism in relation to skepticism, demonstrated how Pyrrhonism targets externalism in a way that shows why we are unsatisfied with it, and suggest how we might proceed in epistemological inquiry in reaction to the Pyrrhonian challenge.

LOGIQUE QUANTIQUE ET INTRICATION

Pierre UZAN

ABSTRACT: Due to the failure of the classical principles of bivalence and verifunctionality, the logic of experimental propositions relative to quantum systems cannot be interpreted in Boolean algebras. However, we cannot say neither that this logic is captured by orthomodular lattices, as claimed by many authors along the line of Birkhoff's and von Neumann's standard approach. For the alleged violation of distributivity is based on the possibility of combining statements relative to complementary contexts, which does not refer to any experience and, consequently, has no meaning. Indeed, quantum logic should be interpreted in partial, transitive Boolean algebras whose compatibility relation limits the application of the connectives within each of its Boolean sub-algebras, which refer to partial, classical descriptions. Moreover, this approach of quantum logic makes it possible to deal with composite systems, which was not possible to do within the standard approach, and then to deal with the fundamental notion of quantum entanglement. The latter notion can be represented by a series of axioms of the object language that restrict the set of experimental statements bearing on a composite system, while its close link to the notion of complementarity can be expressed in the metalanguage.

KEYWORDS: quantum logic, partial boolean algebra, complementarity, entanglement

1. Introduction: théorie quantique et intrication

Le paradigme quantique a remis en question des principes que l'on pensait immuables et sur lesquels repose notre mode de représentation classique du monde. Il s'agit, par exemple, du déterminisme de la mécanique classique qui s'accorde difficilement avec le caractère probabiliste irréductible¹ des prédictions données par la théorie quantique ou de la variation continue des grandeurs en physique classique qui s'accorde mal avec le caractère discret du spectre de certaines observables définies pour un système lié en physique quantique. Mais c'est le phénomène d'intrication qui semble remettre en question les principes les plus profondément ancrés. En effet, ce dernier remet en question le principe de

¹ En effet, les probabilités quantiques ne sont pas des probabilités d'ignorance, comme en physique statistique classique, mais elles reflètent les propriétés structurelles de la théorie quantique et, tout particulièrement, celles liées à l'existence de contextes expérimentaux complémentaires. Voir par exemple Destouches-Février Paulette, *La structure des théories physiques*, Coll. "Philosophie de la matière" (Paris: Presses Universitaires de France, 1951); Michel Bitbol, *Mécanique quantique. Une introduction philosophique* (Paris: Champs Flammarion, 1996).

causalité locale selon lequel les corrélations entre deux événements qui n'ont pas de connexion causale directe doivent nécessairement trouver leur origine dans l'intersection de leurs cônes de lumière passés, c'est à dire dans l'existence d'une cause commune située dans leur passé commun.

En outre, comme l'ont noté certains chercheurs, la propriété d'intrication des états à partir de laquelle peuvent être expliqués les autres effets typiquement quantiques (comme la contextualité des phénomènes, le phénomène d'interférences ou la complémentarité des observables) ne concerne pas seulement le domaine matériel (et, en particulier, le domaine de la physique microscopique) mais aussi des domaines très divers de la vie, et de façon non exceptionnelle. En effet, lorsque cette propriété est considérée dans un cadre théorique généralisé où toute référence a priori au monde physique a été éliminée,² elle permet d'expliquer la nature des corrélations psychophysiques,³ de résoudre les paradoxes de la perception⁴ ou ceux de la théorie classique de la décision.⁵ Par conséquent, nous pouvons dire qu'elle constitue une caractéristique essentielle de la réalité phénoménale, « essentielle » tout autant par sa fréquence d'occurrence que par les bouleversements conceptuels profonds auxquels elle donne lieu. Je suggère donc, dans le prolongement des propositions qui ont été formulées pour construire une logique quantique⁶, de développer une « logique de l'intrication » capable de rendre compte de façon explicite des modifications de notre mode de pensée qu'implique cette caractéristique essentielle de notre expérience.

2. La logique classique des propositions expérimentales et sa remise en question

Les énoncés descriptifs les plus simples de la physique classique sont de la forme « l'objet x a la propriété P », énoncé qui sera dit « vrai » si x possède effectivement la propriété P et « faux » dans le cas contraire. L'ensemble des énoncés descriptifs

² Harald Atmanspacher, Hartmann Römer, Harald Walach, "Weak Quantum Theory: Complementarity and Entanglement in Physics and Beyond," *Foundations of Physics* 32 (2002): 379–406.

³ Pierre Uzan, "On the Nature of Psychophysical Correlations," *Mind and Matter* 12, 1 (2014): 7–36.

⁴ Harald Atmanspacher, Thomas Filk et Hartmann Römer, "Théorie quantique faible: cadre formel et applications," in *Théorie quantique et sciences humaines*, ed. Michel Bitbol (Paris: CNRS Editions, 2009).

⁵ Diederik Aerts, Sandro Sozzo, "Quantum Structure in Economics: The Ellsberg Paradox," ArXiv:1301.0751 v1 [physics.soc-ph] 4 Janv 2013.

⁶ Je fais allusion, en particulier, aux travaux de Birkhoff et von Neumann, Destouche Février, Jauch et Piron, Dalla Chiarra, Hugues et Bitbol, travaux qui seront mentionnés et expliqués plus précisément ci-après.

est clos par l'opération unaire de négation, notée \neg dans la suite, et par les opérations binaires de conjonction, notée \wedge , et de disjonction, notée \vee . La valeur de vérité d'un énoncé complexe, qui ne peut être, lui aussi, que « vrai » ou « faux », est déterminée par les valeurs de vérité des énoncés plus simples qui le composent en utilisant les tables de vérité du calcul propositionnel classique. L'ensemble de ces énoncés descriptifs muni de la négation \neg et des opérations de conjonction \wedge et de disjonction \vee qui sont associatives, commutatives et distributives l'une par rapport à l'autre, et pour lequel on peut définir un énoncé tautologique, notée \mathbf{V} , et une contradiction, notée \mathbf{F} , constitue une interprétation particulière (énoncés « descriptifs ») de la logique classique L_{cl} dont la structure est une algèbre de Boole (ou un treillis de Boole⁷). La structure de la logique classique est ainsi isomorphe à l'algèbre de Boole constituée par l'ensemble $\mathcal{P}(E)$ des parties d'un ensemble E ordonné par la relation d'inclusion et muni des opérations de complémentation, d'intersection et de réunion :

$$(\mathcal{P}(E), \subseteq, \text{Compl}, \cap, \cup),$$

l'ensemble E et l'ensemble vide \emptyset correspondant, respectivement, aux énoncés \top et \perp définis ci-dessus.

Cependant, la construction brièvement rappelée ci-dessus pour la logique classique repose sur les deux hypothèses suivantes qui sont remises en question dans le domaine quantique -qu'il s'agisse de la physique quantique au sens strict ou de la théorie quantique généralisée mentionnée dans l'introduction:

1) le principe de bivalence, c'est à dire l'affirmation selon laquelle un énoncé est soit vrai, soit faux, et qu'il ne peut avoir d'autres valeurs de vérité. Le principe de bivalence de la logique classique suppose, en fait, d'accepter un principe de réalisme local stipulant que les objets ont, à chaque instant, des propriétés bien définies et qu'il y aurait donc toujours un sens a priori à attribuer une valeur de vérité, vrai ou faux, à l'énoncé « l'objet x a la propriété P ». Or, dans le domaine quantique, il n'y a généralement pas de sens à assigner l'une de ces deux valeurs de vérité à un tel énoncé. Tout au plus, en *physique* quantique, il sera possible d'assigner à un tel énoncé une *probabilité conditionnelle* d'occurrence calculée par la règle de Born : la probabilité qu'une mesure effectuée sur l'objet x préparé dans un état donné confirme qu'il vérifie bien la propriété P . Les valeurs de vérité « vrai » et « faux » ne peuvent être assignées à un énoncé que dans les cas

⁷ Ces deux structures sont équivalentes en définissant la relation d'ordre \leq du treillis de la façon suivante : $a \leq b$ ssi $a = a \wedge b$ ssi $b = a \vee b$. La relation d'ordre et les opérations logiques seront en fait toujours représentées ensemble dans la description formelle des différentes structures utilisées.

particuliers où cette probabilité est, respectivement, égale à 1 ou à 0. Dans le but d'assigner une valeur de vérité à un énoncé qui ne répond pas à ces conditions particulières (énoncé « certain » ou « toujours faux »), plusieurs stratégies ont été envisagées : on peut soit essayer de maintenir quand même une sémantique bivalente en se référant à la vérification expérimentale⁸ de cet énoncé, soit rajouter une troisième valeur de vérité, comme par exemple « indéterminé » selon Reichenbach ou « faux absolu » selon Destouches Février,⁹ soit encore définir la valeur de vérité d'un énoncé par la probabilité conditionnelle¹⁰ de sa réalisation dans la mesure où la théorie quantique nous permet de calculer cette probabilité.

2) la vérifonctionnalité de la logique classique, c'est à dire le fait que la valeur de vérité d'un énoncé complexe est complètement déterminée par celles des énoncés plus simples qui le composent en utilisant les tables de vérité relatives aux opérations logiques utilisées dans cet énoncé. Cette hypothèse de vérifonctionnalité est aussi remise en question dans le domaine quantique à cause de la propriété de *contextualité* de la théorie quantique. La propriété de contextualité désigne le fait que le phénomène observé dépend de façon essentielle du contexte expérimental où il est observé, qu'il n'a pas d'existence indépendante de ce contexte. Par exemple, l'énoncé « le spin selon la direction Y de l'électron est + $\frac{1}{2}$ » se réfère à l'expérience consistant à mesurer ce spin, notamment à l'aide d'un appareil de Stern et Gerlach orienté selon la direction Y, et ne renvoie pas a priori à une propriété intrinsèque de cet électron qu'il posséderait indépendamment de cette expérience. La *contextualité* de la théorie quantique a pour conséquence que la conjonction des deux énoncés renvoyant, respectivement, à la mesure d'observables complémentaires (et donc à des contextes expérimentaux complémentaires) ne renvoie à *aucun dispositif permettant sa vérification et que sa valeur de vérité*¹¹ *ne peut donc être calculée à partir de celles de ces deux énoncés*. C'est, par exemple, le cas de la conjonction des deux énoncés « le spin de l'électron selon la direction Y est + $\frac{1}{2}$ » et « le spin de l'électron selon la direction Z est + $\frac{1}{2}$ »

⁸ Ou, ce qui revient au même, selon la formulation adoptée par von Neuman, en ne considérant que les deux valeurs de vérité possibles (0 ou 1) du projecteur associé à la propriété testée.

⁹ Hans Reichenbach, *Philosophie Foundations of Quantum Mechanics* (Mineola, N.Y.: Dover, 1944); Destouches-Février, *La structure des théories physiques*. Les propositions de logiques trivalentes faites par ces auteurs ne seront pas retenues ici dans la mesure où elles attribuent une valeur de vérité à des conjonctions et des disjonctions d'énoncés renvoyant à des dispositifs expérimentaux (ou à des observables) complémentaires alors que ces combinaisons n'ont, en fait, aucun sens physique dans ce cas.

¹⁰ Ce qui peut être discuté si l'on pense que la notion de « vérité » utilisée devrait refléter un état actuel du monde, comme c'est le cas pour un énoncé descriptif de la physique classique.

¹¹ Quelque soit d'ailleurs la façon dont cette valeur de vérité est définie.

qui ne renvoie à aucun dispositif expérimental permettant de mesurer *à la fois* le spin selon Y et selon Z alors que chacun d'eux renvoie à un dispositif de Stern et Gerlach orienté, respectivement, selon les directions Y et Z et permettant de le vérifier.

3. La logique quantique standard ne permet pas de représenter la complémentarité et l'intrication

Une première caractérisation de la logique quantique formulée à partir de la structure mathématique de la théorie quantique (formalisme des espaces de Hilbert et, corrélativement, algèbre C^* des observables) avait été donnée par Birkhoff et von Neumann¹² en 1936, caractérisation qui a été précisée plus récemment par Jauch et Piron.¹³ Ces auteurs ont affirmé que l'ensemble des énoncés descriptifs d'un système quantique muni des connecteurs de conjonction, de disjonction et de négation, qui ne peut plus être mis en correspondance avec l'algèbre de Boole des parties d'un ensemble, est un treillis orthomodulaire, où la propriété d'orthomodularité, qui désigne une propriété plus faible que la distributivité, s'écrit :

$$\text{si } a \leq b \text{ alors } b = a \vee (b \wedge \lrcorner a),$$

$\lrcorner a$ étant l'énoncé correspondant au complément orthogonal du sous-espace A de H associé à l'énoncé a . Cette structure est isomorphe à l'ensemble des sous-espaces clos de l'espace de Hilbert relatif à ce système partiellement ordonné par la relation d'inclusion ensembliste et muni des opérations d'intersection, de somme directe et de complémentation orthogonale :

$$(C(H), \subseteq, \cap, \oplus, \lrcorner),$$

où l'espace H correspond à la tautologie \mathbf{V} alors que l'espace ne contenant que le vecteur nul $\{0\}$ correspond à l'antilogie \mathbf{F} .

Cependant, cette caractérisation « standard » de la logique quantique pose problème dans la mesure où, comme nous l'avons noté ci-dessus pour les propositions expérimentales relatives au spin d'une particule dans deux directions différentes –et comme le souligne Bitbol,¹⁴ une telle structure rassemble des classes d'énoncés pouvant renvoyer à des contextes expérimentaux complémentaires et

¹² Garrett Birkhoff et John Von Neumann, "The Logic of Quantum Mechanics," *The Annals of Mathematics*, 2nd Ser. 37, 4 (1936): 823-843.

¹³ J.M. Jauch et C. Piron, "On the Structure of Quantal Proposition Systems," in *The Logico-Algebraic Approach to Quantum Mechanics: Historical Evolution*, ed. C. A. Hooker (Dordrecht: D. Reidel, 1975), 427-436.

¹⁴ Bitbol, *Mécanique quantique*, § 1.2.10.

leur combinaison (conjonction ou disjonction) n'a donc *aucun sens physique* puisqu'elle ne renvoie à aucun dispositif expérimental permettant sa vérification. Ces combinaisons d'énoncés relevant de contextes expérimentaux complémentaires doivent donc être considérées comme *des énoncés mal formés*.

En outre, une conséquence fâcheuse de cette approche logique de la théorie quantique proposée par Birkhoff et von Neumann ainsi que de leurs prolongements actuels,¹⁵ apparaît lorsque le système considéré est un système composé. Comme l'ont montré Aerts¹⁶ ainsi que Randall et Foulis¹⁷ par des moyens différents, aucune « structure-produit » ayant les mêmes propriétés que celles associées à chacun des deux systèmes composés, et en particulier l'orthomodularité qui est la caractéristique essentielle de la logique quantique standard, ne peut être construite.

Ces deux remarques montrent ainsi que la logique quantique standard, telle qu'elle a été proposée par ses fondateurs et qu'elle est aujourd'hui développée, souffre de deux problèmes sérieux (qui sont d'ailleurs liés, comme nous le verrons dans la suite) : 1) elle manipule des énoncés qui n'ont aucune interprétation physique et pour lesquels on ne peut donc attribuer aucune valeur de vérité, et 2) elle ne peut traiter le cas important de systèmes composés *et ne peut donc représenter le concept d'intrication qui en constitue pourtant une (si ce n'est la) caractéristique essentielle* –selon les mots de Schrödinger.¹⁸ Ces deux constats affaiblissent considérablement la portée et même l'intérêt de la logique quantique standard.

4. Comment traiter la combinaison de contextes complémentaires ?

Est-il possible de surmonter ce problème relatif à la combinaison de contextes complémentaires ? En accord avec les conclusions d'Heelan¹⁹ à ce sujet, Bitbol a proposé la construction d'un langage *méta-contextuel* permettant d'articuler les descriptions contextuelles d'un système quantique et d'en analyser la logique.

¹⁵ M. L. Dalla Chiara, "Quantum Logic" in *Handbook of Philosophical Logic: Alternatives to Classical Logic*, ed. D. Gabbay et F. Guentner (Dordrecht: D. Reidel, 1986); M. L. Dalla Chiara et R. Giuntini, "Quantum Logics," ArXiv: quant-ph/0101028, 2008.

¹⁶ Diederik Aerts, *The One and the Many*. Doctoral Dissertation, Free University of Brussels 1982.

¹⁷ C. Randall and D.J. Foulis, "Tensor Products of Quantum Logics Do Not Exist," *Notices of the American Mathematical Society* 26, 6 (1979):A-557.

¹⁸ Erwin Schrödinger, "Discussion of Probability Relations Between Separated Systems," *Proceedings of the Cambridge Philosophical Society* 31 (1936): 555–563; 32 (1936): 446–451.

¹⁹ P. A. Heelan, "Complementarity, Context-Dependence and Quantum Logic," *Foundations of Physics* 1, 2 (1970): 95–110.

Après avoir défini les opérations de conjonction, disjonction, implication et négation de langages relatifs à des contextes différents, cet auteur montre, en particulier, la non distributivité des opérations de conjonction et de disjonction dans cette logique méta-contextuelle.²⁰

Mais il est, en fait, possible de tenir compte de la complémentarité des contextes sans faire appel à un langage méta-contextuel, en restreignant simplement l'applicabilité des opérations de combinaison des propositions expérimentales à *des structures booléennes partielles*. C'est cette voie là qui a été proposée par Kochen et Specker ainsi que par Hugues²¹ et que nous suivrons car elle nous paraît plus intuitive. Pour cela, il faut interpréter la logique quantique par *une algèbre de Boole partielle transitive* où une relation binaire de compatibilité entre énoncés du langage est introduite:

$$A = (E, \nabla, \wedge, \vee, \perp),$$

où ∇ , la relation binaire de compatibilité entre les énoncés de E, est supposée *réflexive et symétrique (mais non transitive)*. Cette relation peut être définie de la façon suivante:²²

Deux propositions p et q sont compatibles s'il existe trois propositions u, v et w orthogonales deux à deux²³ telles que $u \vee v = p$ et $v \vee w = q$.

Ce qui signifie que si deux propositions sont compatibles elles appartiennent à une même (sous-)algèbre de Boole.²⁴

La notion de contexte, qui est essentielle, est définie formellement par un ensemble de propositions expérimentales décrivant *l'état de préparation* d'un système. C'est donc un ensemble d'énoncés caractérisant son état et à partir duquel peuvent être dérivés les énoncés expérimentaux relatifs aux résultats de mesures pouvant être effectuées sur ce système. Un contexte peut donc être considéré intuitivement comme une base de données à partir de laquelle peuvent être

²⁰ Bitbol, *Mécanique quantique*, annexe 1.

²¹ S. Kochen and E. P. Specker, "The Calculus of Partial Propositional Functions," in *The Logico-Algebraic Approach to Quantum Mechanics*, 277-292. R. I. G. Hughes, "Semantic Alternatives in Partial Boolean Quantum Logic," *Journal of Philosophical Logic* 14, 4 (1985): 411-446.

²² David W. Cohen, *An Introduction to Hilbert Space and Quantum Logic* (New York: Springer-Verlag, 1989).

²² L'ensemble des propositions (u, v, w) ainsi caractérisé est appelé « décomposition de compatibilité ».

²⁴ Notons que deux énoncés « compatibles », appartenant donc à une même sous-algèbre de Boole, peuvent être contradictoires. La notion de « compatibilité » pour des propositions est liée au fait que ces dernières peuvent être dérivées d'un même contexte (voir ci-après) et ne doit pas être confondue avec leur non-contradiction logique.

dérivés tous les énoncés expérimentaux portant sur ce système lorsqu'il est soumis à des mesures. Un contexte sera noté par la lettre Γ indicée par l'état quantique auquel il renvoie: par exemple, Γ_ω est l'ensemble des énoncés caractérisant l'état ω .

Contextes complémentaires. Deux contextes Γ_{ω_1} et Γ_{ω_2} seront dit complémentaires si pour tout couple de propositions (p_1 , p_2) appartenant, respectivement, à Γ_{ω_1} et Γ_{ω_2} , p_1 et p_2 ne sont pas compatibles, c'est à dire que $(p_1 \vee p_2)$ n'est pas vérifié. Autrement dit, *les propositions de deux contextes complémentaires Γ_{ω_1} et Γ_{ω_2} définissent deux sous-algèbres de Boole distinctes.* La propriété de complémentarité des contextes, qui peut donc être définie comme ci-dessus en se référant au langage objet, sera notée à l'aide du symbole de relation \perp , comme $\Gamma_{\omega_1} \perp \Gamma_{\omega_2}$.

Dans une telle structure qui peut être construite à partir d'une famille d'algèbres de Boole (incluant, en l'occurrence, celles qui correspondent à des contextes expérimentaux différents), la conjonction et la disjonction d'énoncés ne sont définies *que pour des couples d'énoncés compatibles*: \wedge et \vee sont ainsi des opérations « partielles », définies à l'intérieur des sous-algèbres de Boole de cette structure, ce qui évite de conjoindre des contextes expérimentaux complémentaires :

$a \wedge b$ et $a \vee b$ ne sont définies que si $a \vee b$.

En outre, la transitivité de la relation d'ordre qu'on définit à l'aide des opérations algébriques partielles (ne pouvant plus s'appliquer à des énoncés incompatibles) :

$a \leq b$ ssi $a = a \wedge b$ ssi $b = a \vee b$

est maintenant valide:

si $a \leq b$ et $b \leq c$ alors $a \leq c$,

et traduit la compatibilité des énoncés (ou cohérence interne) de chacune des sous-algèbres de E mais pas de ceux appartenant à des sous-algèbres associée à des contextes complémentaires.

Selon cette dernière approche, deux descriptions complémentaires d'un système quantique définissent deux sous-algèbres d'une unique algèbre de Boole partielle distributive régissant l'articulation de l'ensemble d'*énoncés* descriptifs. Alors que dans l'approche développée par Bitbol la complémentarité des contextes se reflète au niveau des propriétés méta-linguistiques (la non-distributivité, en particulier) de la structure régissant l'articulation des différents *langages* contextuels. Néanmoins, dans ces deux approches la complémentarité des

descriptions ou des contextes expérimentaux se traduit par la même propriété structurelle: *l'impossibilité de plonger deux descriptions complémentaires dans une seule et unique algèbre de Boole* (qu'elle soit définie comme une algèbre des énoncés ou une algèbre des langages). Cette marque structurelle de la complémentarité se retrouve bien sûr dans les différentes extensions qui ont été proposées de la logique quantique standard par des logiques du premier ordre ou des logiques modales²⁵, ainsi que dans les logiques quantiques « opérationnelles » associant explicitement aux propriétés des questions traduisant les tests expérimentaux permettant de vérifier ces propriétés et dont les réponses sont soit « oui », soit « non ».²⁶

Notons enfin que si dans le cas où deux propositions expérimentales sont relatives à des contextes incompatibles leur combinaison à l'aide des connecteurs \wedge et \vee n'est pas définie, il est par contre possible de combiner ces deux propositions *de façon séquentielle*, c'est à dire en introduisant une notion d'ordre temporel dans leur vérification –ce qui renvoie à une expérience de double-mesure non pas simultanées mais effectuées l'une après l'autre. Pour exprimer cette idée, nous introduirons un connecteur « puis », noté \wp , permettant de donner un sens expérimental, et donc une valeur de vérité, à la formule :

$$p1 \wp p2$$

même si $p1$ et $p2$ ne sont pas compatibles.

En prenant en compte la définition de ce connecteur \wp , la logique quantique, que nous appellerons L1, relative à la description d'un système quantique *non composé* sera définie de la façon suivante :

Logique quantique L1

- Langage propositionnel :

Prop: Un ensemble dénombrable de symboles de proposition qui s'interprètent intuitivement par les propositions expérimentales utilisées pour décrire le système

Connecteurs de conjonction, de disjonction, de négation, ainsi qu'un connecteur « puis », noté \wp , permettant de tenir compte de la non-commutativité des mesures: \wedge, \vee, \neg, \wp

²⁵ Dalla Chiara, "Quantum logic," Dalla Chiara et Giuntini, "Quantum Logics."

²⁶ Hughes, "Semantic Alternatives," 411-446; J. M. Jauch, *Foundations of Quantum Mechanics* (Reading, MA: Addison-Wesley, 1968).

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Le connecteur \wp introduit une notion d'ordre (et donc une temporalité) dans l'évaluation des énoncés : « $p_1 \wp p_2$ » signifie intuitivement que p_2 est évaluée *après* p_1 .

- Sémantique : La logique quantique est, comme nous l'avons notée ci-dessus, interprétée dans une algèbre de Boole partielle transitive:

$$A = (E, \nabla, \wedge, \vee, \lceil \rceil).$$

Il paraît naturel de définir une *sémantique probabiliste* dans la mesure où les propositions expérimentales sont évaluées par leur probabilité d'occurrence qui nous est fournie par la règle de Born-Gleason de la théorie quantique. En outre, cette valeur de probabilité étant relative à une « préparation » donnée, qui est encodée dans un vecteur d'état, nous définirons la valeur de vérité d'un énoncé par une *probabilité conditionnelle*. Une proposition expérimentale, telle que nous l'avons définie à la section 1, renvoie à une observable (ou une grandeur) et un domaine de valeurs possibles :

$$p =_{\text{df}} (Q, D),$$

ce qui signifie que « la mesure de la propriété Q a pour résultat un nombre de l'intervalle (ou de la réunion d'intervalles) D de l'ensemble des réels ». La valeur de vérité de p se définit alors par la probabilité de mesurer la valeur de l'observable Q dans le domaine D si le système est préparé dans l'état ω , c'est à dire :

$$V_{\omega}(p) = \|\Pi_{(Q,D)}\omega\|^2$$

où $\Pi_{(Q,D)}$ est l'opérateur projection sur le sous-espace de Hilbert H du système considéré relatif à l'observable Q et l'intervalle D . L'opérateur $\Pi_{(Q,D)}$ s'applique à l'état ω dans lequel a été préparé le système avant la mesure et cette probabilité est définie par le carré de la norme du vecteur $\Pi_{(Q,D)}\omega$ obtenu par cette projection de ω .

Comme mentionné ci-dessus, les valeurs de vérité de la conjonction et de la disjonction de deux énoncés ϕ_1 et ϕ_2 *ne sont définies que pour deux énoncés compatibles, appartenant à une même sous-algèbre de Boole*. Dans ce cas, c'est à dire *si* $\nabla(\phi_1, \phi_2)$, la sémantique probabiliste vérifie les axiomes des probabilités classiques (positivité, additivité, monotonie) alors que les valeurs de vérité de la négation et de la disjonction, qui sont, rappelons-le, des probabilités *conditionnelles*, seront définies par :

$$V_{\omega}(\lceil \phi \rceil) =_{\text{df}} 1 - V_{\omega}(\phi)$$

$$V_{\omega}(\phi_1 \vee \phi_2) =_{\text{df}} V_{\omega}(\phi_1) + V_{\omega}(\phi_2) - V_{\omega}(\phi_1 \wedge \phi_2),$$

la valeur de vérité $V_\omega(\phi_1 \wedge \phi_2)$ de la conjonction $\phi_1 \wedge \phi_2$ ne pouvant se réduire au produit de leur valeur de vérité $V_\omega(\phi_1) \cdot V_\omega(\phi_2)$ que *si ϕ_1 et ϕ_2 sont indépendants* –en conformité avec le calcul classique des probabilités.

Dans le cas important où *les énoncés ϕ_1 et ϕ_2 , ne sont pas compatibles*, c'est à dire si $\nabla(\phi_1, \phi_2)$ n'est pas réalisé, ni la conjonction ni la disjonction n'ont de sens mais le connecteur « puis » défini ci-dessus permet de décrire ce phénomène de complémentarité qui constitue, avec celui d'intrication que nous aborderons dans la section suivante, l'une des deux caractéristiques essentielles de la théorie quantique. Il faut pour cela définir sa valeur de vérité par :

$$V_\omega(\phi_1 \wp \phi_2) \stackrel{\text{def}}{=} V_\omega(\phi_1) \cdot V_{\omega_1}(\phi_2) = \left| \left| \Pi_{(Q_2, D_2)} \Pi_{(Q_1, D_1)} \omega \right| \right|^2$$

Dans cette définition, ω_1 est l'état du système *après* que la mesure de Q_1 ait donné un résultat dans l'intervalle D_1 , il fixe le nouveau contexte Γ_{ω_1} dans lequel va être calculée la probabilité que Q_2 prenne une valeur de D_2 . La valeur de vérité de la combinaison de deux énoncés incompatibles par le connecteur \wp se définit donc en faisant appel à deux contextes différents et ne peut se calculer seulement à partir du contexte initial Γ_ω . Dans le cas où les énoncés ϕ_1 et ϕ_2 sont compatibles, la définition du connecteur \wp se réduit bien sûr à celle du connecteur \wedge puisque la mesure de Q_1 ne change pas le contexte Γ :

$$\text{Si } \nabla(\phi_1, \phi_2), \text{ alors } V_\omega(\phi_1 \wp \phi_2) = V_\omega(\phi_1 \wedge \phi_2).$$

- Axiomes et règles d'inférences :

Dans chaque sous-algèbre de Boole, les axiomes et/ou les règles d'inférences sont celles du calcul des propositions classique (qui ne seront pas ré-écrites ici –voir, par exemple, David et al. 2003, chap. 1).

Le connecteur \wp permettant de combiner deux propositions $p = (P, D)$ et $q = (Q, D')$ appartenant à deux sous-algèbres de Boole distinctes est caractérisé par une règle d'inférence qui exprime l'idée que la mesure de l'observable P dans l'intervalle D place le système dans un état ω_P qui détermine un nouveau contexte, noté simplement Γ_P pour alléger la notation, dans lequel s'effectuera la mesure de l'observable complémentaire Q -ce qui signifie que la mesure de P efface (partiellement, du moins) l'information relative à l'état de préparation initiale du système, d'où la règle suivante, qui s'apparente à une règle d'élimination de \wp (et traduit à un changement de contexte) :

$$\frac{\Gamma \vdash p \wp q}{\Gamma_P \vdash q} \quad \wp e$$

Notre but est maintenant de caractériser le concept d'*intrication* dans le cadre de cette logique quantique enrichie du connecteur \wp qui permet de rendre compte de la propriété de complémentarité du domaine quantique et de son interprétation en termes d'algèbre de Boole partielle transitive.

5. L'intrication (logique L2)

La notion d'*intrication* fait intervenir les descriptions relatives à *deux ou plusieurs sous-systèmes* d'un système composé ou la description de degrés de libertés indépendants d'un même système. Afin de porter notre attention sur le phénomène d'intrication qui peut être vérifié expérimentalement par l'observation de corrélations non-locales entre deux sous-systèmes S1 et S2 séparés ou causalement isolés (ce qui signifie que les observables de S1 commutent toutes avec les observables de S2), nous supposons dans la suite que cette dernière hypothèse est toujours réalisée –car c'est bien ce type de corrélations que nous cherchons à caractériser et non l'existence d'une interaction directe entre ces deux sous-systèmes.

Comme nous l'avons souligné à la section 3, une telle logique de l'intrication n'a pas été développée à cause de la difficulté, voire l'impossibilité, d'effectuer une structure « produit » des algèbres orthomodulaires de la logique quantique standard relatives aux sous-systèmes considérés –algèbres qui autorisaient de façon inappropriée la conjonction et la disjonction de propositions incompatibles²⁷. Cependant, ce problème peut être résolu si, comme c'est ici le cas, nous interprétons la logique quantique par une *algèbre de Boole partielle transitive*. En effet, Coray²⁸ a montré que le produit d'algèbres de Boole partielles transitives est aussi une algèbre de Boole partielle transitive. L'algèbre de Boole partielle transitive du système composé S1 + S2 peut s'écrire de la façon suivante:

$$A = (E1 \times E2, \nabla, \&, \Upsilon, N).$$

Dans cette notation, E1 et E2 sont, respectivement, les ensembles de propositions expérimentales descriptives de S1 et de S2, et E1 X E2 est leur produit cartésien. La relation de compatibilité ∇ de A s'applique ici aux couples d'énoncés de E1 X E2. Les symboles $\&$, Υ et N désignent, respectivement, des connecteurs de conjonction, de disjonction et de négation permettant de relier les énoncés de E1

²⁷ Il faut cependant noter des propositions récentes pour caractériser le concept d'intrication en terme de capacité de *transfert d'information* ou de *propriétés épistémiques* qu'il serait possible d'attribuer aux (sous-)systèmes considérés.

²⁸ Giovanni Coray, "Validité dans les algèbres de Boole partielles," *Commentarii Mathematici Helvetici*, 45, 1 (1970): § I.6.

et E2. Par exemple, l'énoncé « $p_1 \& p_2$ » peut se comprendre comme « le système S1 peut être décrit par l'énoncé p_1 et le système S2 par l'énoncé p_2 ». Ces connecteurs qui permettent de former des énoncés à partir de propositions descriptives du système composé S1 + S2 obéissent aux règles classiques de la conjonction, de la disjonction et de la négation *sous l'hypothèse* que S1 et S2 sont « séparés » ou causalement isolés (ce qui signifie que toutes les observables de S1 commutent avec celles de S2). Une hypothèse que nous adoptons ici afin de nous concentrer sur les seules spécificités quantiques, l'existence d'une interaction directe entre sous-systèmes pouvant être traitée classiquement.

Le concept essentiel d'intrication de l'état d'un système composé S1 + S2 renvoie à une combinaison linéaire *particulière* de produits d'états possible de chacun de ses sous-systèmes. Cette combinaison est « particulière » car elle reflète la préparation de ce système composé qui l'a placé dans cet état particulier. Par exemple, un système de deux particules de spin demi-entier peut être préparé dans un état dit « sigulet », ce qui veut dire que nous ne pourrions mesurer que des couples de spins opposés (selon une même direction). Plus généralement, un état intriqué du système composé S1 + S2 renvoie à l'association de deux contextes particuliers Γ_1 et Γ_2 de S1 et S2 permettant de dériver *une partie seulement* des énoncés obtenus en combinant les propositions de E1 et celles de E2 à l'aide des connecteurs booléens « mixtes » $\&$, \vee et \neg -alors que si le système composé des deux sous-systèmes causalement séparés (c'est l'hypothèse adoptée) n'est pas dans un état intriqué, rien ne restreint alors l'ensemble de ces énoncés qui sont tous a priori dérivables des contextes associés aux *états produits* $\omega = \omega_1 \otimes \omega_2$.

Lorsque le système composé est dans un état intriqué, il existe donc deux contextes Γ_1 et Γ_2 de S1 et S2 qui définissent deux sous-algèbres de Boole dans chacune des algèbres A1 et A2 et qui se combinent pour former un nouveau contexte, noté $\Gamma_1 \propto \Gamma_2$, où seulement certains énoncés de A1 X A2 pourront être dérivés. L'opération d'intrication, notée \propto , relie les deux contextes Γ_1 et Γ_2 et peut donc être caractérisée par une série d'axiomes qui expriment l'idée que le contexte $\Gamma_1 \propto \Gamma_2$ ne peut dériver *qu'une sélection d'énoncés de A1 X A2*.

Considérons, pour simplifier cette présentation, que les espaces H1 et H2 associés aux deux sous-système S1 et S2 sont à deux dimensions, c'est à dire que E1 et E2 ne contiennent que deux propositions p_1 et p_2 distinctes et différentes de la tautologie **V** et de l'antilogie **F**, ainsi que leurs négations. L'ensemble E1 X E2 s'écrit donc :

$$E1 \times E2 = \{(p_1, p_2), (p_1, \neg p_2), (\neg p_1, p_2), (\neg p_1, \neg p_2)\}.$$

L'intrication de S1 et S2, qui ne fait que traduire plus précisément l'intrication de contextes particuliers de S1 et S2 respectivement, pourra alors se

traduire par l'axiome suivant qui restreint l'ensemble des énoncés de $E1 \times E2$ dérivables du contexte intriqué $\Gamma1 \propto \Gamma2$:

$$\Gamma1 \propto \Gamma2 \vdash (p1 \ \& \ \neg p2), (\neg p1 \ \& \ p2).$$

Cet axiome exprime l'idée selon laquelle l'intrication de l'état du système composé $S1 + S2$, relativement aux observables dont les résultats possibles sont décrits par les propositions $p1, \neg p1$ (pour $S1$) et $p2, \neg p2$ (pour $S2$), a pour conséquence que nous ne pouvons observer que seulement les deux descriptions représentées par les énoncés $(p1 \ \& \ \neg p2)$ et $(\neg p1 \ \& \ p2)$ –au lieu de quatre descriptions possibles. Ces dernières descriptions sont les seules qui sont permises par la préparation initiale, alors que les deux autres énoncés descriptifs ne sont pas dérivables dans le contexte $\Gamma1 \propto \Gamma2$.

Ce point peut être illustré en considérant, comme ci-dessus, un système de deux particules de spin $\frac{1}{2}$ préparé dans un état singulet pour lequel une mesure conjointe du spin dans une direction donnée ne peut donner comme résultat que $(+1/2 \ \& \ -1/2)$ ou $(-1/2 \ \& \ +1/2)$, les propositions descriptives étant ici définies par :

$$p1 = (S1, +1/2) ; p2 = (S2, +1/2),$$

et leur négation en changeant le signe de la valeur du spin.

Dans le cas où les systèmes physiques considérés ont plus de deux dimensions, cette idée peut être généralisée en disant que le membre de droite du séquent ci-dessus ne contient que certaines des conjonctions de propositions de $E1$ et $E2$, ce qui signifie que seulement certains de ces énoncés seront dérivables à partir du contexte $\Gamma1 \propto \Gamma2$.

Enfin, le théorème de Landau²⁹ et ses extensions³⁰ nous permettent de relier les concepts de complémentarité et d'intrication. Ces théorèmes nous enseignent que la complémentarité des contextes dans chacune des algèbres $A1$ et $A2$ est une condition *nécessaire* à l'existence de corrélations non-locales entre $S1$ et $S2$, et donc à l'existence d'états intriqués pour le système composé $S1+S2$. Ce point est corroboré par le fait que les résultats d'une expérience de mesure de corrélations entre des observables de deux sous-systèmes *classiques* (où toutes les observables commutent) sont totalement conformes au calcul classique des probabilités.³¹ Les

²⁹ Lawrence J. Landau, "On the Violation of Bell's Inequality in Quantum Theory," *Physics Letters A* 120, 2 (1987): 54-56.

³⁰ Uzan, "On the Nature of Psychophysical Correlations."

³¹ Par exemple, l'expérience d'Aspect (Alain Aspect, Philippe Grangier et Gérard Roger, "Experimental Realization of Einstein-Podolsky-Rosen-Bohm Gedankenexperiment: A New Violation of Bell's Inequalities," *Physical Review Letters* 49, 2 (1982): 91) a bien confirmé les prédictions de la mécanique quantique pour des observables de polarisation selon des directions différentes *qui sont complémentaires dans chacun des sous-systèmes*. Cette même expérience

concepts de complémentarité et d'intrication peuvent donc être reliés en affirmant, dans le méta-langage nous permettant de parler des contextes et de leurs propriétés, que :

Si $\Gamma_1 \propto \Gamma_2$, alors il existe un contexte Γ'_1 de S_1 et un contexte Γ'_2 de S_2 tels que $\Gamma_1 \perp \Gamma'_1$ et $\Gamma'_2 \perp \Gamma_2$.³²

Conclusion

Comme il a été rappelé dans cet article, dans le prolongement des remarques de Bitbol³³ et de Heelan³⁴ à ce sujet, la logique régissant le domaine quantique *ne peut être identifiée à la logique des projecteurs sur les sous-espaces d'un espace de Hilbert*. La raison est que des énoncés descriptifs appartenant à des sous-algèbres de Boole disjointes, et définissant donc des contextes expérimentaux (et linguistiques) différents ne peuvent être composés. C'est pour cela qu'il nous faut interpréter les énoncés descriptifs d'un système quantique à l'aide d'une algèbre de Boole partielle transitive, permettant de représenter la *complémentarité des contextes*. Nous avons, en outre, défini sur cette structure une sémantique probabiliste conditionnelle qui semble adaptée au domaine quantique où les résultats d'une expérience ne peuvent être, par la structure même de la théorie quantique (existence d'observables complémentaires) et non pour des raisons épistémiques, prédits *que selon une loi probabiliste*.

La complémentarité des contextes, qui peut se représenter à l'aide d'une règle d'« élimination » du connecteur \wp (« puis ») qui est spécifique du domaine quantique, se traduit par l'impossibilité de les plonger dans une même algèbre de Boole. L'intrication de l'état d'un système composé de deux sous-systèmes S_1 et S_2 d'énoncés descriptifs E_1 et E_2 peut être représentée par un schéma d'axiomes restreignant l'ensemble des énoncés composés de $E_1 X E_2$ pouvant décrire ce système. Nous avons enfin mentionné le fait que l'intrication de contextes définis sur deux sous-systèmes d'un système composé n'est possible que s'il existe au moins un contexte complémentaire du contexte de préparation de chacun de ces deux sous-systèmes.

effectuée avec des systèmes classiques (observables commutatives) ne laisserait bien sûr apparaître aucune déviation significative avec le calcul classique des probabilités.

³² Rappelons qu'un contexte expérimental est relatif à un certain état de préparation du système dont il s'agit. Γ'_1 et Γ'_2 renvoient donc ici à des préparations de chacun des sous-systèmes S_1 et S_2 qui permettent de mesurer des observables complémentaires de celles définissant les contextes Γ_1 et Γ_2 .

³³ Bitbol, *Mécanique quantique*.

³⁴ Heelan, "Complementarity, Context-Dependence."

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La logique de l'intrication ébauchée ici demande bien sûr à être précisée et sa complétude relativement aux structures d'algèbres de Boole partielles transitives pourrait être montrée à partir de celle de la logique propositionnelle classique relativement à chacune des sous-algèbres de Boole (ce qui est un fait déjà établi) et de la (fiabilité et la) complétude des nouvelles règles et axiomes introduits pour caractériser les propriétés typiquement quantiques de complémentarité et d'intrication. Ce qui constitue l'objet d'un travail en cours.

DEBATE

KK AND THE KNOWLEDGE NORM OF ACTION

Michael DA SILVA

ABSTRACT: This piece examines the purported explanatory and normative role of knowledge in Timothy Williamson's account of intentional action and suggests that it is in tension with his argument against the luminosity of knowledge. Only iterable knowledge can serve as the norm for action capable of explaining both why people with knowledge act differently than those with mere beliefs and why only those who act on the basis of knowledge-desire pairs are responsible actors.

KEYWORDS: knowledge-first, Timothy Williamson, knowledge norm of action, KK

Timothy Williamson's knowledge-first epistemology claims that knowledge is unanalyzable and plays a fundamental role as the norm for assertion and action.¹ For Williamson, knowledge is primitive. All prior attempts to factorize knowledge failed.² It is possible that they must fail.³ Instead, knowledge is the most general mental state operating.⁴ Other purportedly epistemic mental states can and should be analyzed in terms of knowledge.⁵

This piece examines the purported explanatory and normative role of knowledge in Williamson's account of intentional action and suggests that it is in tension with his argument against the luminosity of knowledge. Only iterable knowledge can serve as the norm for action capable of explaining both why people with knowledge act differently than those with mere beliefs and why only those who act on the basis of knowledge-desire pairs are responsible actors.

¹ Timothy Williamson, *Knowledge and its Limits* (Oxford: Oxford University Press, 2000), 33.

² See, e.g., section 1.3 of Williamson, *Knowledge and its Limits*.

³ Linda Zagzebski, "The Inescapability of Gettier Problems," *The Philosophical Quarterly* 44, 174 (1994): 65-74.

⁴ The claim that knowledge is a mental state is not common in contemporary philosophy, but Jennifer Nagel notes that diverse historical figures from Plato to Locke characterized knowledge as a mental state and it is common to do so in psychology; Jennifer Nagel, "Knowledge as a Mental State," *Oxford Studies in Epistemology* 4 (2013): 273-274, 276-281. At 274, Nagel suggests that it is the mainstream of contemporary philosophy that has "gone wrong."

⁵ Justification and belief are thus explained in those terms. Belief, for instance, is an attempt at knowledge; belief "aims at knowledge," but mere belief is a failed attempt. See generally section 1.5 of Williamson, *Knowledge and its Limits*. The phrase "aims at knowledge" appears at 48. Chapter 10 serves partially as an argument for this position and the phrase reappears at 208. The failure of mere belief is stated at 47 ("Mere believing is a botched kind of knowing").

1. Preliminary Notes on the “Knowledge” in “Knowledge-First”

Before analyzing the role of knowledge as the explanation and norm for action, it is worth mentioning a few pertinent points about how Williamson understands knowledge. Williamson claims that knowledge is a mental state. It is unique because it is both factive and unanalyzable:

To know is not merely to believe while various other conditions are met; it is to be in a new kind of state, a factive one.⁶

Knowledge nonetheless shares many important features with other mental states. Indeed, Williamson chooses not to define “mental state” in *Knowledge and its Limits*.⁷ He instead compares knowledge with paradigmatic mental states and highlights the similarities between them. Similarities between mental states, then, partially constitute our understanding of Williamson-ian knowledge.

Controversially, Williamson lists the non-luminosity of knowledge as consistent with other mental states. This non-luminosity is central to the present discussion. According to Williamson, a given condition is luminous iff

[f]or every case α , if in α C obtains, then in α one is in a position to know that C obtains.⁸

Knowledge is not luminous.⁹ This is partly due to margin for error conditions of knowledge.¹⁰ Knowledge requires not being wrong in very close situations.¹¹ It is, in other words, subject to a safety condition:

If one knows, one could not easily have been wrong in a similar case. In that sense, one’s belief is safely true.¹²

One cannot know if one is in a good case or a nearby bad case.

Knowledge’s failure to iterate, demonstrated by Williamson-ian knowledge’s failure to recognize the so-called ‘KK principle,’ both serves as further evidence of its non-luminosity and helps to establish safety concerns. The KK principle asserts that to know, one must know that one knows. Employing a

⁶ Williamson, *Knowledge and its Limits*, 47.

⁷ Williamson, *Knowledge and its Limits*, 27.

⁸ Williamson, *Knowledge and its Limits*, 95.

⁹ See Williamson, *Knowledge and its Limits*, section 4.4 for the argument against it. Despite appearances to the contrary, Williamson repeatedly notes that it is not a Sorites argument, e.g., at 98, 102. An application of anti-luminosity appears in Chapter 5, beginning at 114.

¹⁰ Williamson, *Knowledge and its Limits*, 127.

¹¹ Williamson, *Knowledge and its Limits*, 97.

¹² Williamson, *Knowledge and its Limits*, 147.

principle of charity, Williamson's special case of KK restricts KK to avoid many objections; it reads:

(KK) For any pertinent proposition p , if [a person] knows p then he knows that he knows p .¹³

Williamson denies this principle. He writes that "our knowledge is pervaded by failures of the KK principle" and there are many cases where one can know "something pertinent without knowing that he knows it."¹⁴

Knowledge is not even transparent on Williamson's account. Epistemic transparency, wherein "for every mental state S , whenever one is suitably alert and conceptually sophisticated, one is in a position to know whether one is in S ," is a "myth."¹⁵ Knowing p does not entail even being in a position to know that you know p .¹⁶ Thus,

[o]ne can know something without being in a position to know that one knows it....[O]ne can know that one knows something without being in a position to know that one knows that one knows it.¹⁷

KK's failure is unsurprising once one accepts that reliability also need not iterate:

One can be reliable without being reliably reliable. Since knowledge requires reliability, it is hardly surprising that one can know without knowing that one knows.¹⁸

The non-luminosity of knowledge is not unique among mental states. According to Williamson, *no* non-trivial mental state is luminous. For *every* mental state, there will be cases where I am in it but do not know that I am in it (or not in it and not know that I am not in it). Knowledge is no worse than any other mental state. There may be some trivial cases of luminosity, but they are rare:

Luminous conditions are curiosities. Far from forming a cognitive home, they are remote from our everyday interests. The conditions with which we engage in our everyday life are, from the start, non-luminous.¹⁹

¹³ Williamson, *Knowledge and its Limits*, 115.

¹⁴ Williamson, *Knowledge and its Limits*, 119. See section 5.1 for the full 'Mr. Magoo' example.

¹⁵ Williamson, *Knowledge and its Limits*, 24, 11.

¹⁶ Williamson, *Knowledge and its Limits*, 11, 95.

¹⁷ Williamson, *Knowledge and its Limits*, 114.

¹⁸ Williamson, *Knowledge and its Limits*, 125.

¹⁹ Williamson, *Knowledge and its Limits*, 109.

There is no core set of mental states to which we have special epistemic access.²⁰ To the extent that non-trivial epistemic access is possible, knowledge provides it:

Any genuine requirement of privileged access on mental states is met by the state of knowing *p*. Knowing is characteristically open to first-person present-tense access; like other mental states, it is not perfectly open.²¹

Knowledge, then, is on a par with other mental states with respect to luminosity. If this is true, the value of a given mental state as a norm must be determined on other grounds. Williamson suggests its explanatory power makes it the norm for action. Unfortunately, it is not clear that it can play the explanatory or normative roles if it is not luminous. The value of knowledge may once again rely on it being a luminous condition.

2. Knowledge and the Explanation of Action

One of the key values of adopting a knowledge-first epistemology is its connection to action. For knowledge-first adherents, knowledge both helps explain actions in a manner that other theories cannot, and serves as a norm for action. It plays a role in explaining action that no non-factive notion can play. In Williamson's picture, one will act differently when acting on the basis of a knowledge-desire pair rather than a belief-desire pair. Normatively justified intentional action should be the result of knowledge-desire pairs. The remainder of this piece examines whether non-luminous knowledge can play this explanatory role and serve as the norm for intentional action.

Knowledge as the norm for action is not dealt with in-depth in *Knowledge and its Limits*, but Williamson's argument for knowledge as the norm for assertion in that text helps establish the sufficiency criteria for the claim that knowledge plays a similar normative role for action. Chapter 11 examines the important normative relationship between knowledge and assertion. Knowledge serves as the norm of assertion: "The rule of assertion is the knowledge rule; one must not assert *p* unless one knows *p*."²² According to Williamson, it "could not have been otherwise."²³ Knowledge can be overridden by other norms, but is the generally operative norm of assertion.²⁴ Mere true belief or even probabilistic justified true belief fails to explain the evidential norms for assertion. In the case of a lottery, for instance, you cannot assert that your friend did not win despite extraordinarily

²⁰ Williamson, *Knowledge and its Limits*, 93.

²¹ Williamson, *Knowledge and its Limits*, 25.

²² Williamson, *Knowledge and its Limits*, 249.

²³ Williamson, *Knowledge and its Limits*, 367.

²⁴ Williamson, *Knowledge and its Limits*, 256.

large chances that s/he lost until you know that s/he lost. Even if your statement that s/he lost was true, you could be faulted for saying so without knowing so. This is common in everyday language. The knowledge account explains the inadequacy of probabilistic grounds for assertion and is confirmed by our conversational patterns.²⁵

A similar argument can be made in the case of action. One important motivation for the knowledge-first program is that it accounts for the relationship between knowledge and causation. Williamson's account of knowledge does not use "justified," "caused," "reliable" and related concepts, but he rightly notes that he must explain the connection between knowledge and these related concepts since "knowing seems to be highly sensitive to such factors over wide ranges of cases."²⁶ The special explanatory role of knowledge in causation helps explain why knowledge is the norm for assertion. Similarly, knowledge is the norm for action largely because it is the most natural candidate for explaining action.

It is worth examining Williamson's main case where knowledge alone can sufficiently explain an individual's actions. According to Williamson, there are many cases where one cannot substitute true belief for knowledge without suffering from explanatory loss.²⁷ His key case concerns a robber ransacking a home in search of a diamond. When the robber spends the night in the home, he risks discovery. The best causal explanation for his action is that he knew there was a diamond in the home. According to Williamson,

the probability of his ransacking the house all night, conditional on his having entered it believing that there was a diamond in it, is lower than the probability if his ransacking it all night, conditional on his having entered it knowing that there was a diamond in it.²⁸

Replacing knowledge with true belief would weaken the explanation "by lowering the probability of the explanandum conditional on the explanans."²⁹ Knowledge explains why the robber acts differently and why it is responsible for him to do so.

Williamson is not alone in positing a knowledge norm for action. Williamson's case-based argument can be supplemented by considering his peers. John Gibbons likewise argues for a causal connection between knowledge (which he also views as a mental state) and action. According to Gibbons,

²⁵ Williamson, *Knowledge and its Limits*, 252-253.

²⁶ Williamson, *Knowledge and its Limits*, 41.

²⁷ Williamson, *Knowledge and its Limits*, 61-62.

²⁸ Williamson, *Knowledge and its Limits*, 62.

²⁹ Williamson, *Knowledge and its Limits*, 62.

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there is always more to intentional action than beliefs and desires [outside the attempts context]... Part of what is involved in the more complete explanation of intentional action is knowledge.³⁰

Knowledge is necessary to explain any intentional action. Mere belief will not suffice since

when you act on a false belief, you will not, except by accident, do what you intend. If your psychological explanations make reference to what you believe as well as the truth of those beliefs, this amounts to the claim that truth is psychologically relevant.³¹

Even justified true belief is not causally efficacious;

Explanations of action do not just rely on the attribution of true belief. They rely on attributions of knowledge.³²

Knowledge plays a crucial part in the causal role of explanation. The world has to comply with one's belief to move him or her to action. The world is thus causally relevant. One must, in turn, know something about the world in order to *intentionally* act. To intentionally act, one must know how to perform an action. This requires a "non[-]accidentally effective action plan" for so doing.³³ Any "explanation of intentional action will presuppose knowledge and control on the part of the agent."³⁴ Intentional action requires control over that action and this requires knowledge.³⁵

This explanatory value is potentially even more important to Gibbons than it is to Williamson. On Gibbons' view, establishing the causal explanatory value of knowledge is not merely necessary to establish that knowledge is a special mental state that can serve as the norm for action, but is necessary for establishing knowledge as a mental state in the first place:

Unconscious mental states count as mental states because they play a systematic role in the explanation and production of behavior, and they do so in virtue of their content. Knowledge counts as a kind of mental state for the same reason.³⁶

³⁰ John Gibbons, "Knowledge in Action," *Philosophy and Phenomenological Research* LXII, 3 (2001): 580.

³¹ Gibbons, "Knowledge in Action," 586.

³² Gibbons, "Knowledge in Action," 587.

³³ Gibbons, "Knowledge in Action," 587-588, 590.

³⁴ Gibbons, "Knowledge in Action," 595.

³⁵ Gibbons, "Knowledge in Action," 591.

³⁶ Gibbons, "Knowledge in Action," 599-600.

In either case, knowledge must be a mental state that can better explain at least a broad class of actions if it is to serve as the norm for action. As the following demonstrates, Williamson's own example raises questions about whether knowledge as he understands it can serve this explanatory role.

3. A Potential Tension

It is not clear that Williamson's position on the explanatory power of knowledge accords with his anti-luminosity argument. Williamson-ian knowledge does not need to be iterated, but it is unclear whether he can properly explain the case of the robber without iteration. Some of Williamson's critics claim that these explanations do not require knowledge; a constitutive factor of knowledge can do the same thing.³⁷ It is initially plausible to suggest that Williamson is right that these factors are explanatorily impoverished when compared to knowledge. Iterated knowledge, however, seems to provide the stronger explanation for the robber staying in the house and exposing himself to risk than non-iterated or non-iterable knowledge. It is worth considering whether non-iterated knowledge is more explanatorily efficacious than its competitor epistemic mental states. If not, then there is a potential tension between Williamson's argument against the luminosity of knowledge and his argument for the knowledge norm of action.

When introducing Williamson's argument for the knowledge norm of action, I began by considering his argument for the knowledge norm of assertion. This argument has been forcefully critiqued by David Sosa.³⁸ A similar defect to the one identified by Sosa also applies to Williamson's argument for the knowledge norm of action. According to Sosa, the main argument for the knowledge norm of assertion is that it explains the "oddity" of asserting (1) "*P* but I don't know that *P*." "(1) cannot be known" and only the assertion of that which one knows is felicitous.³⁹ Unfortunately, this approach does not generalize because it cannot account for the oddness of "*P* but I don't know whether I know that *p*" without postulating the KK principle.⁴⁰ This move is unavailable to Williamson and most of his colleagues in the knowledge-first movement. Moreover, it may require further iteration that Sosa finds unacceptable. He thinks the view

³⁷ E.g., Bernard Molyneux suggests firm belief can do the same thing; Bernard Molyneux, "Primeness, Internalism and Explanatory Generality," *Philosophical Studies* 135, 2 (2007): 255-277. Nagel, "Knowledge as a Mental State" questions this approach.

³⁸ David Sosa, "Dubious assertions," *Philosophical Studies* 146 (2009): 269-272.

³⁹ Sosa, "Dubious assertions," 270.

⁴⁰ Sosa, "Dubious assertions," 270.

will have to be strengthened implausibly, to require, for every level, knowledge that you know...that you know that p .⁴¹

The knowledge norm of assertion only accounts for several common examples of odd assertions with epistemic content when the knowledge that can play this normative role is iterable and, on Sosa's account, frequently iterated.

Given the similarities between Williamson's arguments for the knowledge norm of assertion and the knowledge norm of action respectively, it is unsurprising that the defect with Williamson's argument for the knowledge norm of assertion that Sosa identifies has a parallel in Williamson's argument for the knowledge norm of action. Given the threat of regress in the knowledge norm of assertion case and problems with other candidates, Sosa holds that

we should consider giving up on the presupposition that there is a particular norm distinctive of assertion as such.⁴²

This piece does not support a similar skepticism about a particular norm distinctive of action, but it questions Williamson's attempt at identifying this norm. Knowledge may be the unique norm for action, but the type of knowledge that can play this role and explain why people should and do act differently depending on their credal states is not the type Williamson suggests must come first in our epistemic endeavors.

Williamson's main argument for the knowledge norm of action is its ability to explain both why actions on the basis of knowledge-desire pairs differ from actions on the basis of belief-desire pairs in similar circumstances and why we think that only the person who acts on the basis of a knowledge-desire pair acts responsibly when s/he performs what would otherwise be the same act as one acting on the basis of a belief-desire pair. Just as in the case of assertion, however, it is not clear that non-luminous knowledge plays this role in many cases.

Even consideration of Williamson's key case makes this worry clear. Recall the claim that a robber who knows that there is a diamond in the house would stay longer than a similar robber who only believes a diamond is present. This claim is questionable. A robber who knows that he knows that there is a diamond in the house is more likely to stay in the house than a robber who does not know that he knows that there is a diamond in the house. Spending the night ransacking the house is a considerable investment of time and risk. This time expenditure and assumption of risk is more likely when one has higher order epistemic content than when one lacks it. This fact alone suggests that those acting on the basis of an

⁴¹ Sosa, "Dubious assertions," 271.

⁴² Sosa, "Dubious assertions," 271.

iterated knowledge-desire pair will act differently than those acting on the basis of a knowledge-desire or belief-desire pair. One without iterated knowledge will stop searching earlier than someone with iterated knowledge. This raises concerns about the explanatory role of Williamson-ian knowledge; it does not seem to account for all epistemic state-dependent differences in action.

Indeed, there is even reason to suggest that only those acting on the basis of an iterated knowledge-desire pair will act differently than those acting on the basis of a belief-desire pair. One can plausibly argue that the robber needs to know that s/he knows that there is a diamond in the house for him or her to stay in the house longer than an individual with a justified true belief. If one does not know that one knows that there is a diamond in the house, one may be acting on the basis of something functionally equivalent to a justified true belief. Lack of knowledge about one's epistemic states will forestall one's acting on the basis of reasons that epistemic state may give him or her. Whether these people do act differently is a task for experimental philosophers; those who posit an uniterable knowledge norm of action face the onus of proving that uniterable knowledge motivates people in different ways than belief. If the person with knowledge only stays in the house for the same amount of time as the person with a justified true belief, then only iterated knowledge plays the explanatory role in action that helps explain why there is a knowledge norm of action.⁴³

The fact that people do not act on the basis of knowledge is not enough to undermine the knowledge norm of action, even if it does undermine the purported explanatory power of that norm. As Jonathan Jenkins Ichikawa plausibly argues, the knowledge norm of practical reasoning merely posits reasons people have to act in certain ways and does not provide an account of what reasons are sufficient for those actions.⁴⁴ The person with knowledge may have

⁴³ Knowledge may not always need to be iterable for it to explain why people act differently than those with mere justified true beliefs, to justify their different actions or to merely give them reason to act differently. My point stands if knowledge simply needs to be iterable in many cases. Since Williamson's argument relies on the robbery case, the fact that his case requires iterable knowledge is important, but my general point that only an iterable knowledge norm for action generalizes stands even if knowledge does not need to be iterable in this specific case.

⁴⁴ Jonathan Jenkins Ichikawa, "Knowledge Norms and Acting Well," *Thought* 1 (2012): 49-55. At 49, Ichikawa goes on to conclude that "cases where knowledge is present but action is intuitively unwarranted provide not traction against the knowledge norm". Given the fact that Williamson's argument appeals to our intuitions about a case, one is nonetheless justified in focusing on whether action is warranted there. On Ichikawa's construction, one needs to suggest that knowledge gives one no further reason to act than mere belief to undermine the

reason to stay longer than the person with a mere belief, even if s/he does not act on it. The argument in this piece is not, however, merely empirical. Normatively, we could fault an individual for exposing him/herself to major risk without knowing that s/he knows that there is a diamond in the house that potentially justifies said risk. One can also question Williamson's claim that only the person who acts on the basis of a knowledge-desire pair acts responsibly when s/he performs what would otherwise be the same act as one acting on the basis of a mere belief-desire pair. One may think that only the person who knows that s/he knows should stay in the house longer than the person with a mere belief, particularly given the high stakes involved.⁴⁵ Once more the onus is on Williamson to prove otherwise. The fact that so many questions remain in his key case presents an issue for his broader project.

4. Conclusion

Williamson would almost certainly suggest that the problem identified above (and indeed any problem) concerning anti-luminosity besets any theory; my critique does not uniquely apply to his view. Williamson is only able to assert that knowledge is the norm for action because it is the most natural candidate for explaining this and other norms. This claim requires an explanation of how knowledge can be a mental state on par with any other despite not being luminous. Williamson's solution is easy. As we noted above, Williamson claims that no mental state is luminous. If, however, one of the most valuable aspects of his view cannot accord with the anti-luminosity of knowledge, Williamson would be in trouble. Two central aspects of his theory failing to cohere would be a problem. Proving that other mental states are non-luminous may place knowledge on a par with other mental states, but it seems to place it on a par with other mental states as an explanatory mechanism as well. Williamson cannot adopt KK to salvage a knowledge norm of action. Now that the tension in his view is clear, however, his followers must either adopt KK or supplement Williamson's picture with another mechanism. I will do so elsewhere. For now, it suffices to note how Williamson's argument against luminosity causes problems for his account of action.

knowledge norm of action. Even then, it is not obvious that it provides such a reason in the robbery case.

⁴⁵ A separate paper looking at the knowledge norm of action, high stakes and pragmatic encroachment is in progress, so I will not belabor the point here. High stakes may even change our determinations on when we have *any* reason to act, as in the construction in the preceding footnote.

Knowledge is better placed to explain actions than other, non-factive mental states. This makes it a plausible candidate for the norm of action. The primacy of knowledge absent this explanatory and normative value is questionable. Where knowledge is not luminous, however, its ability to account for how individuals do and should act is undermined.⁴⁶

⁴⁶ Thank you to Jason Stanley for his helpful comments on a much earlier draft of this paper and to the audience at the 2014 Canadian Philosophical Association's Annual General Meeting in St. Catharines for their comments on a more recent draft. The final work on this paper was completed when I received financial support from the Canadian Institutes for Health Research (CIHR); I am presently a CIHR Vanier Canada Graduate Scholar and a CIHR Training Fellow in Health Law, Ethics and Policy.

WHAT IS THE PERMISSIBILITY SOLUTION A SOLUTION OF? – A QUESTION FOR KROEDEL

Franz HUBER

ABSTRACT: Kroedel has proposed a new solution, the *permissibility solution*, to the lottery paradox. The lottery paradox results from the *Lockean thesis* according to which one ought to believe a proposition just in case one's degree of belief in it is sufficiently high. The permissibility solution replaces the Lockean thesis by the *permissibility thesis* according to which one is permitted to believe a proposition if one's degree of belief in it is sufficiently high. This note shows that the epistemology of belief that results from the permissibility thesis and the epistemology of degrees of belief is empty in the sense that one need not believe anything, even if one's degrees of belief are maximally bold. Since this result can also be achieved by simply dropping the Lockean thesis, or by replacing it with principles that are logically stronger than the permissibility thesis, the question arises what the permissibility solution is a solution of.

KEYWORDS: permissibility solution, lottery paradox, Thomas Kroedel

Kroedel¹ has proposed a new solution, the *permissibility solution*, to the lottery paradox.² The lottery paradox shows that a plausible thesis, viz. the *Lockean thesis*,³ leads to inconsistency when combined with other theses about belief and about degrees of belief. The Lockean thesis says that an ideal doxastic agent ought to believe a proposition just in case her degree of belief for the proposition is sufficiently high. The permissibility solution replaces the Lockean thesis by the *permissibility thesis* according to which one is permitted to believe a proposition if one's degree of belief in it is sufficiently high. This note shows that the

¹ Thomas Kroedel, "The Lottery Paradox, Epistemic Justification and Permissibility," *Analysis* 52 (2012): 57-60.

² Henry E. Jr. Kyburg, *Probability and the Logic of Rational Belief* (Middletown, CT: Wesleyan University Press, 1961), 197 and, much clearer, Carl Gustav Hempel, "Deductive-Nomological vs. Statistical Explanation," in *Scientific Explanation, Space and Time. Minnesota Studies in the Philosophy of Science* 3, eds. H. Feigl and G. Maxwell (Minneapolis: University of Minnesota Press, 1962), 163f.

³ Richard Foley, "Belief, Degrees of Belief, and the Lockean Thesis," in *Degrees of Belief, Synthese Library* 342, eds. F. Huber and C. Schmidt-Petri (Dordrecht: Springer, 2009), 37-47, John Hawthorne, "The Lockean Thesis and the Logic of Belief," in *Degrees of Belief*, eds. Huber and Schmidt-Petri, 49-74.

epistemology of belief that results from the permissibility thesis and the epistemology of degrees of belief is empty in the sense that one need not believe anything, even if one's degrees of belief are maximally bold. Since this result can also be achieved by simply dropping the Lockean thesis, or by replacing it with principles that are logically stronger than the permissibility thesis, the question arises what the permissibility solution is a solution of.

In order to discuss Kroedel's proposal⁴ it will prove useful to formalize the Lockean thesis in various flavors. For the sake of simplicity let us assume that there is a context-independent threshold c that specifies just how high sufficiently high is. Let us also assume that the threshold c is the same for all propositions under consideration.

Let a be the ideal doxastic agent, and B_a her belief relation, and Pr_a her degree of belief function. $\mathbf{O}(\cdot)$ is the operator for obligation, and $\mathbf{O}(\cdot \mid \cdot)$ is the operator for conditional obligation. The permissibility operators can be introduced as the duals of the obligation operators: $\mathbf{P}(\cdot) = \neg\mathbf{O}(\neg\cdot)$ and $\mathbf{P}(\cdot \mid \cdot) = \neg\mathbf{O}(\neg\cdot \mid \cdot)$. \leftrightarrow is the material biconditional.

Locke 1 For all propositions (that are expressible in the underlying language) A ,

$$B_a(A) \leftrightarrow \text{Pr}_a(A) > c.$$

Locke 2 For all propositions A , $\mathbf{O}(B_a(A) \leftrightarrow \text{Pr}_a(A) > c)$.

Locke 3 For all propositions A , $\mathbf{O}(B_a(A)) \leftrightarrow \mathbf{O}(\text{Pr}_a(A) > c)$.

Locke 4 For all propositions A ,

$$\mathbf{O}(B_a(A) \mid \text{Pr}_a(A) > c \wedge X) \text{ and } \mathbf{O}(\text{Pr}_a(A) > c \mid B_a(A) \wedge Y).$$

Locke 1 is logically stronger than Locke 2 which in turn is logically stronger than Locke 3. Locke 1 is logically stronger than Locke 4, whatever the exact nature of X and Y . We will see that Locke 4 is the best formalization of the Lockean thesis, as the lottery paradox does not arise for Locke 2 or Locke 3.

X and Y are "admissible" propositions. What counts as admissible will depend on the underlying deontic logic, among others (see the appendix). For present purposes X can be assumed to be information about Pr_a and B_a that is consistent with $\text{Pr}(A) > c$ and does not conflict with any of the norms mentioned

⁴ Kroedel, "The Lottery Paradox," Thomas Kroedel, "The Permissibility Solution to the Lottery Paradox – Reply to Littlejohn," *Logos & Episteme* 4 (2013): 103-111, Thomas Kroedel, "Why Epistemic Permissions Don't Agglomerate – Another Reply to Littlejohn," *Logos & Episteme* 4 (2013): 451-455.

What is The Permissibility Solution a Solution Of? – A Question for Kroedel below. Similarly for Y , except that Y is information about B_a and Pr_a that is consistent with $B_a(A)$.

The Lockean thesis is of philosophical interest, because it allows us to derive the epistemology of belief from the epistemology of degrees of belief. (Strictly speaking it is the doxastology of belief and of degrees of belief, but I will follow standard usage.) Unfortunately the Lockean thesis results in paradox. It violates our expectations on the epistemology of belief once we start to fill in the details of our epistemology of degrees of belief. The latter will include the following, among others. For all real numbers x and y , and for all propositions A and C (in some algebra of propositions) over some non-empty set of possible worlds W that are jointly inconsistent in the sense that $A \cap C = \emptyset$:

1. $\mathbf{O}(\text{Pr}_a(A) \geq 0)$
2. $\mathbf{O}(\text{Pr}_a(W) = 1)$
3. $\mathbf{O}(\text{Pr}_a(A \cup C) = x + y \mid \text{Pr}_a(A) = x \wedge \text{Pr}_a(C) = y)$ and
 $\mathbf{O}(\text{Pr}_a(A) = x \mid \text{Pr}_a(A \cup C) = x + y \wedge \text{Pr}_a(C) = y)$ and
 $\mathbf{O}(\text{Pr}_a(C) = y \mid \text{Pr}_a(A \cup C) = x + y \wedge \text{Pr}_a(A) = x)$. Etc.

This formalization is incomplete, as there are many further conditional obligations. It may also seem somewhat unorthodox. However, this formalization is logically weaker, even once completed, than the standard formulation of the probability calculus without the operators for obligation and conditional obligation. It is so in the exact same way that Locke 4 is logically weaker than Locke 1.

I assume $\mathbf{O}(\cdot)$ to be equivalent to $\mathbf{O}(\cdot \mid T)$ for the trivial or tautological (action) sentence T . Only action sentences will be allowed in the first argument place. While I have not done so, the reader should also feel free to replace ‘ \mathbf{O} ’ by ‘ \mathbf{O}_a ’, as these norms are directed at our ideal doxastic agent a , and justified by being the means to attaining *her* doxastic goals.⁵ Given (a complete version of) the norms 1-3 it makes sense to additionally assume that c is a real number not smaller than $1/2$, but smaller than 1.

When we add the Lockean thesis to our epistemology of degrees of belief we get an epistemology of belief. For instance, from Locke 4 and (a complete

⁵ James M. Joyce, “A Non-Pragmatic Vindication of Probabilism,” *Philosophy of Science* 65 (1998): 575-603, James M. Joyce, “Accuracy and Coherence: Prospects for an Alethic Epistemology of Partial Belief,” in *Degrees of Belief*, eds. Huber and Schmidt-Petri, 263-297.

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version of) 1-3 we can derive that the ideal doxastic agent ought to believe the tautological proposition W , and that she ought to believe every logical consequence of any belief of hers. That is, for appropriate choices of X and Y :

Taut $\mathbf{O}(B_a(W) | X)$

Closure For all propositions A and C with $A \subseteq C$, $\mathbf{O}(B_a(C) | B_a(A) \wedge Y)$.

With Kroedel⁶ we will supplement Locke 4 with Littlejohn's Low,⁷ except that we formalize it as a conditional obligation:

Low For all propositions A , $\mathbf{O}(\neg B_a(A) | \text{Pr}_a(A) < 1-c \wedge X)$,

where X is assumed to be information about Pr_a and B_a that is consistent with $\text{Pr}_a(A) < 1-c$ and does not conflict with any of the norms mentioned above. Given Low we can derive that the ideal doxastic agent is not permitted to believe the contradictory proposition \emptyset , and that she is not permitted to believe the negation of any belief of hers. That is, for appropriate choices of X and Y ,

Contr $\mathbf{O}(\neg B_a(\emptyset) | X)$

Neg For all propositions A , $\mathbf{O}(\neg B_a(\neg A) | B_a(A) \wedge Y)$.

We expect these consequences to be part of epistemology of belief. Unfortunately there are other norms we expect to be part of our epistemology of belief that we cannot derive. Indeed, there are norms we expect to be part of our epistemology of belief that are precluded by Locke 4 in the presence of Low and (a complete version of) 1-3. The lottery paradox shows the following one to be an example.

Conj For all propositions A and C , $\mathbf{O}(B_a(A \cap C) | B_a(A) \wedge B_a(C) \wedge Y)$.

(Y is again appropriately chosen information about B_a and Pr_a that is consistent with $B_a(A) \wedge B_a(C)$ and does not conflict with any of the norms mentioned above. I will assume this to be the case for the remainder of this note without explicitly mentioning it any longer.) The reason is that adding Conj to Locke 4 and Low and (a complete version of) 1-3 results in a conflict of norms for many seemingly reasonable distributions Pr of the ideal doxastic agent's degrees of belief.

Lottery 1 $\mathbf{O}(B_a(\text{Ticket 1 loses}) | \text{Pr})$, and

⁶ Kroedel, "Another Reply."

⁷ Clayton Littlejohn, "Lotteries, Probabilities, and Permissions," *Logos & Episteme* 3 (2012): 509-514.

What is The Permissibility Solution a Solution Of? – A Question for Kroedel

Lottery 2 $\mathbf{O}(B_a(\text{Ticket 2 loses}) \mid \text{Pr})$, and ... and

Lottery 100 $\mathbf{O}(B_a(\text{Ticket 100 loses}) \mid \text{Pr})$

Lottery 101 $\mathbf{O}(B_a(\text{Tickets 1, ..., 100 all lose}) \mid \text{Pr})$

Lottery 102 $\mathbf{O}(B_a(\text{Tickets 1, ..., 100 do not all lose}) \mid \text{Pr})$

Lottery 1 follows from Locke 4 and can be read as follows: given that her degrees are what they are, the ideal doxastic agent ought to believe that ticket 1 loses. Similarly for Lottery 2, ..., Lottery 100, and Lottery 102. Lottery 101 follows from Lottery 1, ..., Lottery 100, and Conj (in conditional deontic logic⁸). Together Lottery 101 and Lottery 102 and Conj imply

Lottery $\mathbf{O}(B_a(\emptyset) \mid \text{Pr})$

However, the following consequence of Low and (a complete version of) 1-3

anti-Lottery $\mathbf{O}(\neg B_a(\emptyset) \mid \text{Pr})$

implies the negation of Lottery:

non-Lottery $\neg \mathbf{O}(B_a(\emptyset) \mid \text{Pr})$

In other words, in the presence of seemingly minimal theses about degrees of belief and about belief, Locke 4 implies a contradiction.

The lottery paradox also arises if we formulate the Lockean thesis as Locke 1. Interestingly, though, the lottery paradox does not arise if we formulate the Lockean thesis as Locke 2 or Locke 3, even if 1-3 are strengthened to the standard formulation of the probability calculus and Conj is analogously strengthened as follows (\supset is the material conditional):

For all propositions A and C , $B_a(A) \wedge B_a(C) \supset B_a(A \cap C)$.

What is paradoxical about the lottery paradox is that the epistemology of belief that we get from Locke 4 and Low and (a complete version of) 1-3 does not meet our expectations. In order to resolve the inconsistency at least one of the above mentioned principles has to be given up. Different philosophers have made different recommendations.⁹ However, until recently, none has replaced the

⁸ See Bas C. van Fraassen, "The Logic of Conditional Obligation," *Journal of Philosophical Logic* 1 (1972): 417-438.

⁹ e.g. Henry E. Jr. Kyburg, "Conjunctivitis," in *Induction, Acceptance, and Rational Belief*, ed. M. Swain (Dordrecht: Reidel, 1970), 232-254, Richard C. Jeffrey, "Dracula Meets Wolfman: Acceptance vs. Partial Belief," in *Induction, Acceptance, and Rational Belief*, ed. Swain, 157-185.

Lockean thesis with an alternative thesis that would allow us to derive the epistemology of belief from the epistemology of degrees of belief. Maybe this is not possible. Then we need to explain why our expectations, as formulated in Conj and Contr and Closure and Taut, are misguided. Or maybe it is possible. Then we need to replace Locke 4 with a different thesis that does not preclude Conj. Either way, more has to be done if we do not merely want resolve the inconsistency, but solve the paradox and obtain an epistemology of belief.

Leitgeb¹⁰ and Lin and Kelly¹¹ have recently proposed substitutes for the Lockean thesis. Their substitutes do not merely allow for Conj (and the other principles), their substitutes logically imply Conj (and the other principles) when conjoined to the epistemology of degrees of belief as formulated in Low and (a complete version of) 1-3 (that includes norms for conditional degrees of belief).

Leitgeb's solution to the lottery paradox¹² may be termed the *stability solution*. It replaces the Lockean thesis by the thesis that an ideal doxastic agent ought to believe a proposition B just in case there is a proposition C implying B such that the agent's degree of belief for C conditional on any A consistent with C is greater than c . Lin and Kelly's solution¹³ may be termed the *sufficiency solution*. It replaces the Lockean thesis by the thesis that the ideal doxastic agent ought to believe a proposition just in case this proposition is implied by, i.e. a (not necessarily proper) superset of, the set of most plausible possible worlds. According to Lin and Kelly¹⁴ the ideal doxastic agent considers a possible world to be more plausible than another possible world if, and only if, her degree of belief in the former is sufficiently higher than her degree of belief in the latter. The most plausible worlds are those for which there is none that is more plausible. Both the stability solution and the sufficiency solution derive an epistemology of belief from the epistemology of degrees of belief that meets our expectations as they are formulated in Taut and Contr and Closure and Conj and still other principles that date back to Hintikka¹⁵ and Alchourrón, Gärdenfors and Makinson.¹⁶

¹⁰ Hannes Leitgeb, "Reducing Belief Simpliciter to Degrees of Belief," *Annals of Pure and Applied Logic* 164 (2013): 1338-1389.

¹¹ Hanti Lin and Kevin T. Kelly, "Propositional Reasoning that Tracks Probabilistic Reasoning," *Journal of Philosophical Logic* 41 (2012): 957-981.

¹² Leitgeb, "Reducing Belief."

¹³ Lin and Kelly, "Propositional Reasoning."

¹⁴ Lin and Kelly, "Propositional Reasoning."

¹⁵ Jaakko Hintikka, *Knowledge and Belief. An Introduction to the Logic of the Two Notions* (Ithaca, NY: Cornell University Press, 1961). Reissued as Jaakko Hintikka *Knowledge and Belief. An Introduction to the Logic of the Two Notions*, prepared by V.F. Hendricks and J. Symons (London: King's College Publications, 2005).

What is The Permissibility Solution a Solution Of? – A Question for Kroedel

What about the permissibility solution proposed by Kroedel?¹⁷ The latter arises by replacing the Lockean thesis with the *permissibility thesis* according to which the ideal doxastic agent is permitted to believe a proposition given that her degree of belief in this proposition is sufficiently high. More specifically, it results by adding the formalization High 5 instead of Locke 4 to Low and (a complete version of) 1-3.

High 5 For all propositions A , $\mathbf{P}(B_a(A) \mid \text{Pr}_a(A) > c \wedge X)$.

An alternative formalization of the permissibility thesis works with obligations instead of conditional obligations and so avoids specifications of admissibility:

High 4 For all propositions A , $\text{Pr}_a(A) > c \supset \mathbf{P}(B_a(A))$.

However, there may be Is-Ought problems with High 4.¹⁸ This is perhaps clearest when we reformulate High 4 in terms of what is forbidden, $\mathbf{F}(\cdot) = \neg\mathbf{P}(\cdot)$:

High 4 For all propositions A , $\mathbf{F}(B_a(A)) \supset \text{Pr}_a(A) \leq c$.

The Munich born poet Christian Morgenstern, well known for the (ridiculing of) philosophical theses in his poems, explains better than I ever could what is problematic about the Is-Ought problem and High 4. The following is the last verse of the poem *Die unmögliche Tatsache*, which is part of *Palmström*,¹⁹ and which I translate as “The impossible fact:”

Und er kommt zu dem Ergebnis:

»Nur ein Traum war das Erlebnis.

Weil«, so schließt er messerscharf,

»nicht sein kann, was nicht sein darf!«

In addition High 4 has consequences that are presumably not welcome by Kroedel,²⁰ such as

High 4-1 For all propositions A , $\text{Pr}_a(A) > c \wedge \mathbf{O}(B_a(\neg A)) \supset \mathbf{P}(B_a(A))$.

¹⁶ Carlos E. Alchourrón, Peter Gärdenfors, and David Makinson, “On the Logic of Theory Change: Partial Meet Contraction and Revision Functions,” *Journal of Symbolic Logic* 50 (1985): 510-530.

¹⁷ Kroedel, “The Lottery Paradox,” Kroedel, “Reply,” Kroedel, “Another Reply.”

¹⁸ David Hume, *A Treatise of Human Nature*, ed. L.A. Selby-Bigge (Oxford: Clarendon Press, 1739/1896).

¹⁹ Christian Morgenstern, *Palmström* (Berlin: B. Cassirer, 1910).

²⁰ Kroedel, “The Lottery Paradox,” Kroedel, “Reply,” Kroedel, “Another Reply.”

Finally, everything I am going to claim about High 5 below is also true for High 4. The same is true for High 4-5, which is logically weaker than High 4 (in the deontic logic $SD4$ ²¹)

High 4-5 For all propositions A , $O(\Pr_a(A) > c) \supset P(B_a(A))$.

Even High 4-5 (and High 4, if we adopt the deontic logic $SD4$) has consequences that are presumably not welcome by Kroedel,²² such as the permission to believe a proposition if one's degree of belief is sufficiently high even if one already believes its negation:

High 4-5-1 For all propositions A , $O(\Pr_a(A) > c) \wedge O(B_a(\neg A)) \supset P(B_a(A))$.

For these reasons, and because High 5 does not lead to an inconsistency, I assume that High 5 is a charitable formalization of the permissibility thesis, and the permissibility solution as intended by Kroedel.²³ It is perhaps worth noting that the inconsistency is also avoided if we replace Locke 4 by

High 2 For all propositions A , $O(\Pr_a(A) > c \supset B_a(A))$.

High 3 For all propositions A , $O(\Pr_a(A) > c) \supset O(B_a(A))$.

The inconsistency is not avoided if we replace Locke 4 by one of

High 0 For all propositions A , $\Pr_a(A) > c \supset O(B_a(A))$.

High 1 For all propositions A , $\Pr_a(A) > c \supset B_a(A)$.

Adding High 5 instead of Locke 4 to Low and (a complete version of) 1-3 avoids the inconsistency. It does not solve the lottery paradox, though. Our expectations as formulated in Taut, for instance, are not met, as the permissibility solution does not deliver an epistemology of belief according to which an ideal doxastic agent ought to believe the tautological proposition. While Low implies that our ideal doxastic agent is not permitted to believe the contradictory proposition, she is not required to believe the tautological – or, for that matter, *any* – proposition if we add High 5 to Low and (a complete version of) 1-3.

Nor are our expectations as formulated in Closure met, as the permissibility solution does not deliver an epistemology of belief according to which an ideal doxastic agent ought to believe every logical consequence of all her beliefs. The

²¹ See Jan Wolenseński, "Deontic Logic and Possible Worlds Semantics: A Historical Sketch," *Studia Logica* 49 (1990): 273-282.

²² Kroedel, "The Lottery Paradox," Kroedel, "Reply," Kroedel, "Another Reply."

²³ Kroedel, "The Lottery Paradox," Kroedel, "Reply," Kroedel, "Another Reply."

ideal doxastic agent need not even believe a single logical consequence of any of her beliefs. Nor need she obey Conj and believe the conjunction of any two propositions she believes.

Indeed, suppose our ideal doxastic agent has one of the boldest Jamesian degree of belief functions, one that assigns to each proposition the maximal degree of belief or else the minimal degree of belief.²⁴ It is compatible with this and High 5 and Low and (a complete version of) 1-3 (even in their logically stronger formulations) that the ideal doxastic agent's belief relation is the most cautious of all Cliffordian belief relations, the one that suspends judgment with respect to all propositions.²⁵ In other words, the epistemology of belief that results from the epistemology of degrees of belief on the permissibility solution is, in this precise sense, empty.

Replacing the Lockean thesis by High 5 (and Low) resolves the inconsistency. This much is true of the permissibility solution. However, this much is also true if we simply drop the Lockean thesis and with it the epistemology of belief, as Jeffrey²⁶ recommends. It also true if we bite the bullet and deny Conj, as recommended by Kyburg,²⁷ or, as recommended by Spohn,²⁸ if we develop two parallel epistemologies, viz. the epistemology of belief and the epistemology of degrees of belief. Indeed, this much is true even if we adopt High 3 or High 2, both of which are logically stronger than High 5.

However, replacing the Lockean thesis by High 5 does not solve the paradox, as our expectations on the epistemology of belief remain not being met. While the Lockean thesis may not give us the epistemology of belief we have expected, it at least gives us an epistemology of belief. The permissibility solution does not give us an epistemology of belief that we did not expect. But that is only because, much like the recommendation by Jeffrey,²⁹ it does not give us an epistemology of belief at all.

²⁴ William James, "The Will to Believe (1896)," in *The Will to Believe and Other Essays in Popular Philosophy*, ed. F. Burkhardt, F. Bowers, and I. Skrupskelis (Cambridge, MA: Harvard University Press, 1979), 291-341.

²⁵ William K. Clifford, "The Ethics of Belief (1877)," in *The Ethics of Belief and Other Essays*, ed. T. Madigan (Amherst, MA: Prometheus Books, 1999), 70-96.

²⁶ Jeffrey, "Dracula Meets Wolfman."

²⁷ Kyburg, "Conjunctivitis."

²⁸ Wolfgang Spohn, "A Survey of Ranking Theory," in *Degrees of Belief*, ed. Huber and Schmidt-Petri, 185-228.

²⁹ Jeffrey, "Dracula Meets Wolfman."

Postscriptum on conditional obligations

According to the logic of conditional obligations, the following rule of inference preserves the designated value (is truth-preserving, if one thinks that conditional norms have truth values), and hence preserves deontic validity:³⁰

L From $P(C|D)$ and $O(D|C)$ and $O(A|D)$ infer $O(A|C)$.

L says that conditional obligations are transitive if the condition C is permissible given the “middleman” D . The more conditions are permissible given various middlemen, the fewer assumptions about admissibility are needed. It is in this sense that what counts as permissible will depend on the underlying deontic logic. Suppose the underlying deontic logic included the axiom schema: $P(C|D)$ or $\vdash O(\neg C|D)$, \vdash specifying derivability from a complete version of 1-3, Low, Locke 4 for empty X and Y . Then no assumptions about admissibility would be needed.³¹

³⁰ My preferred logic of conditional obligations is sketched in Franz Huber, “New Foundations for Counterfactuals,” *Synthese* 191 (2014): 2180ff.

³¹ I am grateful to Thomas Kroedel and Kevin Kuhl for comments on earlier versions of this note. My research was supported by the Canadian SSHRC through its Insight program and by the Connaught Foundation through its New Researcher program.

PHENOMENAL CONSERVATISM AND SELF-DEFEAT ARGUMENTS: A REPLY TO HUEMER

Moti MIZRAHI

ABSTRACT: In this paper, I respond to Michael Huemer's reply to my objection against Phenomenal Conservatism (PC). I have argued that Huemer's Self-defeat Argument for PC does not favor PC over competing theories of basic propositional justification, since analogous self-defeat arguments can be constructed for competing theories. Huemer responds that such analogous self-defeat arguments are unsound. In this paper, I argue that Huemer's reply does not save his Self-defeat Argument for PC from my original objection.

KEYWORDS: appearances, dogmatism, justification, phenomenal conservatism, seemings, self-defeat argument

Michael Huemer's Self-defeat Argument for Phenomenal Conservatism (PC), the view according to which "[i]f it seems to *S* that *p*, then, in the absence of defeaters, *S* thereby has at least some degree of justification for believing that *p*,"¹ goes like this:

- (1) All our beliefs (in relevant cases) are based upon appearances.
- (2) A belief is (doxastically) justified only if what it is based upon constitutes an adequate source of (propositional) justification.
- (3) Therefore, if appearances are not a source of justification, then all our beliefs are unjustified, including the belief (if one has it) that appearances are not a source of justification.²

¹ Michael Huemer, "Compassionate Phenomenal Conservatism," *Philosophy and Phenomenological Research* 74 (2007): 30-55. See also Michael Huemer, *Skepticism and the Veil of Perception* (Lanham, MD: Rowman and Littlefield, 2001). Michael Huemer, "Phenomenal Conservatism and the Internalist Intuition," *American Philosophical Quarterly* 43 (2006): 147-158.

² Michael Huemer, "Phenomenal Conservatism and Self-Defeat: A Reply to DePoe," *Philosophical Studies* 156 (2011): 1-13. See also Huemer, *Skepticism and the Veil of Perception*, 98-115.

This Self-defeat Argument for PC, Huemer argues, shows that “any theory [of basic propositional justification] that rejects PC is self-defeating, in the sense that if such a theory is true, it is (doxastically) unjustified.”³

Against Huemer’s Self-defeat Argument for PC, I have argued that analogous self-defeat arguments can be made in support of competing theories of basic propositional justification.⁴ This shows that considerations of self-defeat alone do not favor PC over its competitors. As an example, I have constructed the following self-defeat argument for evidentialism, “the view that the epistemic justification of a belief is determined by the quality of the believer’s evidence for the belief.”⁵

- (1*) All our beliefs (in relevant cases) are based upon *evidence*.
- (2) A belief is (doxastically) justified only if what it is based upon constitutes an adequate source of (propositional) justification.
- (3*) Therefore, if *evidence* is not a source of justification, then all our beliefs are unjustified, including the belief (if one has it) that *evidence* is not a source of justification.

In response to this self-defeat argument for evidentialism, Huemer claims that he need not be concerned, since evidentialism is not incompatible with PC. He should only be troubled by self-defeat arguments for “competing theories of basic propositional justification (that is, theories incompatible with PC).”⁶ Huemer sums up his reply as follows:

It does not matter if it is possible to construct an implausible and unsound version of the self-defeat argument in defense of other theories of justification. That casts no doubt on my use of the self-defeat argument for PC. What sets PC apart from its rivals (i.e., theories that are incompatible with PC) is that the Self-Defeat Argument for PC has a first premise that is plausible and true, whereas the self-defeat arguments for rival theories have first premises that are implausible and false.⁷

³ Huemer, “A Reply to DePoe,” 1.

⁴ Moti Mizrahi, “Phenomenal Conservatism, Justification, and Self-Defeat,” *Logos & Episteme* 5 (2014): 103-110.

⁵ Earl Conee and Richard Feldman, “Evidentialism,” *Philosophical Studies* 48 (1985): 15-34. More explicitly: “*S*’s belief that *p* at time *t* is justified (well-founded) iff (i) believing *p* is justified for *S* at *t*, (ii) *S* believes *p* on the basis of evidence that supports *p*” (Richard Feldman, *Epistemology* (Upper Saddle River, NJ: Prentice Hall, 2002), 46).

⁶ Michael Huemer, “Alternative Self-Defeat Arguments: A Reply to Mizrahi,” *Logos & Episteme* 5 (2014): 223-229.

⁷ Huemer, “A Reply to Mizrahi,” 229.

As I understand it, Huemer's reply to my original objection consists of the following moves:

- (M1) Some theories of basic propositional justification, such as evidentialism, are compatible with PC, and thus self-defeat arguments for such theories need not trouble the phenomenal conservative.
- (M2) Self-defeat arguments for theories that are incompatible with PC have implausible first premises.

I think there are problems with both (M1) and (M2).

As far as (M1) is concerned, although evidentialism can be made compatible with PC, it can also be made incompatible with PC. PC is an internalist theory of justification insofar as it counts certain mental states (i.e., seemings) as justifiers. On the other hand, although it is often construed as an internalist theory, evidentialism can also be construed as an externalist theory of justification.⁸ "Externalist evidentialism,"⁹ according to which mental states are not justifiers,¹⁰ would be incompatible with PC but the analogous self-defeat argument for evidentialism can be made to support externalist evidentialism as well. That is:

- (1') All our beliefs (in relevant cases) are based upon *ext-evidence*.
- (2) A belief is (doxastically) justified only if what it is based upon constitutes an adequate source of (propositional) justification.
- (3') Therefore, if *ext-evidence* is not a source of justification, then all our beliefs are unjustified, including the belief (if one has it) that *ext-evidence* is not a source of justification.

This, then, is an argument for a theory of basic propositional justification, namely, externalist evidentialism, which is incompatible with PC.

As an additional example of a theory that is incompatible with PC, consider the following self-defeat argument for a simple version of process reliabilism, an externalist theory according to which, if *S*'s belief that *p* results from a reliable belief-forming process, then *S* is justified in believing that *p*.¹¹

⁸ Kevin McCain, *Evidentialism and Epistemic Justification* (New York: Routledge, 2014), 120.

⁹ Earl Conee, "First Things First," in *Evidentialism: Essays in Epistemology*, eds. Earl Conee and Richard Feldman (New York: Oxford University Press, 2004), 35.

¹⁰ "Externalism on this dimension, then, would be the view that something other than mental states operate as justifiers" (George Pappas, "Internalist vs. Externalist Conceptions of Epistemic Justification," *The Stanford Encyclopedia of Philosophy*, Fall 2013 Edition, Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/fall2013/entries/justep-intext>).

¹¹ Alvin Goldman, "What is Justified Belief?" in *Justification and Knowledge*, ed. George S. Pappas (Dordrecht: D. Reidel Publishing Co, 1979), 1-24. See also Alvin Goldman, "Immediate

- (1'') All our beliefs (in relevant cases) are based upon *reliable belief-forming processes*.
- (2) A belief is (doxastically) justified only if what it is based upon constitutes an adequate source of (propositional) justification.
- (3'') Therefore, if *reliable belief forming processes* are not a source of justification, then all our beliefs are unjustified, including the belief (if one has it) that *reliable belief-forming processes* are not a source of justification.

As in the case of the analogous self-defeat arguments for evidentialism and externalist evidentialism, premise (1'') is a simple variation on premise (1) of Huemer's Self-defeat Argument for PC; instead of 'appearances' in (1), we now have 'reliable belief-forming processes' as the basic source of propositional justification. Premise (2) remains unchanged. Consequently, from premises (1'') and (2), conclusion (3'') is supposed to follow, just as conclusion (3) is supposed to follow from premises (1) and (2) in Huemer's Self-defeat Argument for PC.

Even if Huemer is right about PC and evidentialism being compatible, the fact that analogous self-defeat arguments can be made in support of competing theories of basic propositional justification would still undermine Huemer's Self-defeat Argument for PC. To see why, note that two theories may be competing but not incompatible theories. For example, suppose that my car does not start one morning. There are at least two potential explanations for that: (a) the car does not start because the battery is dead; (b) the car does not start because it is out of gas. These two explanations are competing explanations for the same fact, namely, that my car does not start, insofar as each explanation, if true, would explain why the car does not start. But (a) and (b) are not incompatible, since both (a) and (b) could be true. Now, in trying to figure out which explanation is more plausible, or which we should prefer, we could appeal to several theoretical desiderata, such as simplicity. But if (a) and (b) are equally simple explanations of the fact that my car does not start, then simplicity is not a consideration that would warrant choosing (a) over (b) as the most likely explanation (and vice versa). In other words, if both (a) and (b) are simple explanations of the fact that my car does not start, then simplicity alone does not favor (a) over (b) or (b) over (a).

Now, suppose that Huemer is right about PC and evidentialism being compatible. Even if they are compatible, in the sense that both could be true, they are competing theories of basic propositional justification insofar as each theory, if true, would "*account for* the justification of certain sorts of beliefs that we

Justification and Process Reliabilism," in *Epistemology: New Essays*, ed. Quentin Smith (New York: Oxford University Press, 2008), 63-82.

antecedently take to be justified” (original emphasis).¹² Huemer argues that, as far as theories of basic propositional justification are concerned, PC has a feature that “sets it apart from its rivals,”¹³ namely, PC is such that rejecting it is self-defeating. However, if the aforementioned considerations are correct, then proponents of rival theories of justification can say the same thing about their theories. That is, evidentialism, externalist evidentialism, and process reliabilism have the same feature that PC has, namely, rejecting each of these theories is self-defeating, as the analogous self-defeat arguments show. If so, then considerations of self-defeat alone do not favor PC over its rivals, even if those rival theories are compatible with PC, just as considerations of simplicity alone do no favor (a) over (b) or (b) over (a).

Accordingly, if two competing theories (whether they are compatible or not), T_1 and T_2 , have the same theoretical desideratum, D , then D does not warrant preferring T_1 over T_2 or T_2 over T_1 . Since PC and evidentialism (or externalist evidentialism) have the same theoretical desideratum, namely, rejecting them is self-defeating, self-defeat considerations do not favor PC over evidentialism (or externalist evidentialism) and vice versa. So, if a self-defeat argument supports PC, a self-defeat argument supports evidentialism (or externalist evidentialism) as well. In that case, however, self-defeat arguments do not favor one of these theories over the other.

Although he might accept (1*), since he says that “evidence is a source of justification,” and that “depending on what ‘evidence’ means, PC might just be a form of evidentialism,”¹⁴ Huemer would presumably respond to the self-defeat arguments for externalist evidentialism and process reliabilism by claiming that (1') and (1'') are implausible or false. This is his second move, (M2). But I don't see why Huemer is entitled to assert (1) in his Self-defeat Argument for PC but the evidentialist and the reliabilist are not entitled to assert (1') and (1'') in their analogous self-defeat arguments for externalist evidentialism and process reliabilism. Recall that the “in relevant cases” clause in the first premise of a self-defeat argument is meant to rule out beliefs that are “based upon self-deception, faith, or the like.”¹⁵ The relevant cases, then, are “beliefs that we antecedently take to be justified.”¹⁶ In fact, in his reply, Huemer restates this clause as follows:

¹² Huemer, “A Reply to Mizrahi,” 226.

¹³ Huemer, “A Reply to Mizrahi,” 229.

¹⁴ Huemer, “A Reply to Mizrahi,” 224.

¹⁵ Huemer, “A Reply to DePoe,” 1.

¹⁶ Huemer, “A Reply to Mizrahi,” 226.

beliefs “that are reasonable candidates for being justified.”¹⁷ As I understand it, this clause is meant to rule out unjustified beliefs, and so the first premise of a self-defeat argument is about beliefs that we take to be *justified* (otherwise, the Self-defeat Argument for PC would be invalid). As Huemer writes:

One of the tasks for epistemological theory is to *account for* the justification of certain sorts of beliefs that we antecedently take to be justified – e.g., my perceptual belief that there is a squirrel in the tree outside, my belief that I feel hungry, your belief that $2+1=3$ (original emphasis).¹⁸

The question, then, is what makes justified beliefs justified or what “*account[s] for* the justification of [justified] beliefs” (original emphasis).¹⁹ For phenomenal conservatives, justified beliefs are justified in virtue of being based upon appearances. For externalist evidentialists, justified beliefs are justified in virtue of being based upon ext-evidence. For process reliabilists, justified beliefs are justified in virtue of resulting from reliable belief-forming processes. Since each of these *accounts for* the justification of beliefs that we take to be justified, if the phenomenal conservative is entitled to premise (1) in Huemer’s Self-defeat argument for PC, then the evidentialist is entitled to premise (1’) in the analogous self-defeat argument for externalist evidentialism, and the reliabilist is entitled to premise (1’’) in the analogous self-defeat argument for process reliabilism.

Unsurprisingly, Huemer appeals to seemings in order to justify premise (1) of his Self-defeat Argument for PC when he says the following:

Consider some reasonable candidate for a justified belief, say your belief that $2+1=3$. If you reflect on this belief, I think you are just going to find it plausible that it is based upon the appearance that $2+1=3$ (its seeming to you that $2+1=3$).²⁰

This is unsurprising because, if PC is true, then the premises of the Self-defeat Argument for PC, just like any other candidate for a justified belief, would have to be justified ultimately on the basis of seemings. But the same can be said of PC’s rivals. For example, if externalist evidentialism is true, then (1’), just like any other candidate for a justified belief, would be justified ultimately in virtue of being based on ext-evidence. Similarly, if process reliabilism is true, then (1’’), just like any other candidate for a justified belief, would be justified ultimately in virtue of resulting from some reliable belief-forming process.

¹⁷ Huemer, “A Reply to Mizrahi,” 223.

¹⁸ Huemer, “A Reply to Mizrahi,” 226.

¹⁹ Huemer, “A Reply to Mizrahi,” 226.

²⁰ Huemer, “A Reply to Mizrahi,” 227.

In that respect, it is important to note that the claim that PC is not a “complete theory of basic propositional justification,” does not render (1) more plausible than either (1′) or (1′′). If anything, it renders (1) false. According to Huemer, “*complete* theories of basic propositional justification [...] purport to identify the *sole* ultimate source of propositional justification,” whereas PC “merely purport[s] to identify *a* source of propositional justification” (original emphasis).²¹ Saying that appearances are merely *a* source of justification suggests that there are other sources of justification.²² But if we have justified beliefs that are based on other sources of justification, then we have justified beliefs that are not based on appearances. In other words, it is not the case that *all* our justified beliefs are based upon appearances. If so, then (1) is false.

Finally, in an attempt to save his Self-defeat Argument for PC from my objection, Huemer might argue that (1′) and (1′′) are less plausible than (1) because of skeptical possibilities, such as brain-in-vat scenarios. For example, according to (1′) all our justified beliefs are based on ext-evidence. But Huemer might say that this is false because, if we are brains in vats, then we have beliefs but no ext-evidence. The problem with this move, however, is that we might have beliefs in skeptical scenarios, but it is far from clear that we have *justified* beliefs. The first premise of a self-defeat argument is a premise about (what we take to be) *justified* beliefs. Arguably, these are not the sort of beliefs subjects form under radical skeptical circumstances. If so, then Huemer’s own construal of (1) as being about “beliefs that we antecedently take to be justified,”²³ blocks this move.

To sum up, self-defeat arguments can be constructed for competing theories of basic propositional justification that are either compatible or incompatible with PC. For this reason, (M1) fails as an attempt to save Huemer’s Self-defeat Argument for PC from my original objection. Moreover, competing theories of basic propositional justification account for (what we take to be) justified beliefs just as well as PC does, and so (1′) and (1′′) are no less plausible than (1).²⁴ For this reason, (M2) fails as an attempt to save Huemer’s Self-defeat Argument for PC

²¹ Huemer, “A Reply to Mizrahi,” 226.

²² In fact, as mentioned above, Huemer says that “evidence is a source of justification” (224), although he probably construes evidence along internalist rather than externalist lines.

²³ Huemer, “A Reply to Mizrahi,” 226.

²⁴ Indeed, one might argue that (1) is even less plausible than (1′) and (1′′) insofar as it posits the existence of queer entities, namely, seemings, for which there is rather questionable evidence. See Ryan T. Byerly, “It Seems Like There Aren’t Any Seemings,” *Philosophia* 40 (2012): 771–782.

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from my original objection. If this is correct, then the original objection still stands: considerations of self-defeat alone do not favor PC over its competitors.²⁵

²⁵ I am grateful to Michael Huemer for replying to my paper, to Eugen Huzum for inviting me to reply to Huemer's reply, and to Marcus Arvan for helpful comments.

AGAINST KORNBLITH AGAINST REFLECTIVE KNOWLEDGE

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ABSTRACT: In *On Reflection*, Hilary Kornblith criticizes Sosa's distinction between animal and reflective knowledge. His two chief criticisms are that reflective knowledge is not superior to animal knowledge and that Sosa's distinction does not identify two kinds of knowledge. I argue that Sosa can successfully avoid both of these charges.

KEYWORDS: reflective knowledge, Hilary Kornblith, Ernest Sosa, introspection, virtue epistemology

For over twenty years, Ernest Sosa has been distinguishing between animal and reflective knowledge. While the official characterization has shifted,¹ the basic claims about the distinction remain the same, roughly: animal and reflective knowledge are a kind of virtuous/skilled/apt performance; reflective knowledge is animal knowledge plus some type of "perspective" on one's belief and its fit with others; reflective knowledge is superior to animal knowledge; and reflective knowledge brings about epistemic benefits.

In *On Reflection*,² Hilary Kornblith has criticized Sosa's distinction. In section I of this paper, I identify two chief criticisms: (i) reflective knowledge is not superior to animal knowledge; and (ii) Sosa's distinction does not identify two kinds of knowledge. In section II, I argue that both of these charges can be successfully avoided.

¹ Compare Ernest Sosa, "Descartes and Virtue Epistemology," in *Reason, Metaphysics, and Mind*, ed. Kelly James Clark and Mike Rea (Oxford: Oxford University Press, 2012), 121; Ernest Sosa, *Reflective Knowledge* (Oxford: Clarendon Press, 2009), 75f.; Ernest Sosa, *A Virtue Epistemology* (Oxford: Clarendon Press, 2007), 32; Ernest Sosa, "Knowledge and Intellectual Virtue," in his *Knowledge in Perspective* (Cambridge: Cambridge University Press, 1999), 240; and Ernest Sosa, "Intellectual Virtue in Perspective" in his *Knowledge in Perspective*, 278. My concern is mostly with *some* characterization of this distinction being apt. Fortunately, for the most part, my response – and Kornblith's criticisms – do not rest upon the differences between these different formulations.

² Hilary Kornblith, *On Reflection* (Oxford: Oxford University Press, 2012). I focus on this presentation since it is his most recent; I'll draw upon previous versions of the criticisms when relevant.

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I. Kornblith's Criticisms

In this section, I identify two chief criticisms Kornblith has of Sosa's distinction between animal and reflective knowledge.

First, *reflective knowledge is not superior to animal knowledge*. Kornblith's argument is this. Reflective knowledge is superior to animal knowledge only if by reflecting we are able to arrive at more reliable beliefs.³ As Kornblith writes,

The whole point in subjecting one's beliefs to reflective scrutiny... is to increase one's reliability.⁴

But reflection on one's belief does *not* increase reliability.⁵ Kornblith devotes an entire section to defending this claim, and concludes

...there seems little reason to agree with Sosa that reflective knowledge is superior to mere animal knowledge in virtue of the additional reliability which reflection provides.⁶

So, reflective knowledge is not superior to animal knowledge. More schematically:

(P1) Reflective knowledge is superior to animal knowledge only if reflection produces more reliable beliefs.

(P2) Reflection does not produce more reliable beliefs.

(C1) So, reflective knowledge is not superior to animal knowledge.

We can identify another criticism: *Sosa's distinction does not identify two different kinds of knowledge*. Kornblith's criticism here is closer to a challenge to Sosa to show he has identified two different kinds of knowledge than an argument that Sosa has not. Kornblith introduces his criticism by way of analogy. He considers a (supposed) distinction between what he calls "consultative knowledge" – roughly, knowledge I possess after I consult with a range of friends on some matter – and "non-consultative knowledge" – knowledge I possess when I do not consult with a range of friends on some matter. Kornblith's intuition is that, while there might be two distinct epistemic states here, there are not two distinct *kinds of knowledge*.⁷ Further, he finds Sosa's distinction to be analogous to this distinction, writing

³ Kornblith, *On Reflection*, 16, 18.

⁴ Kornblith, *On Reflection*, 16.

⁵ Kornblith, *On Reflection*, 20-6.

⁶ Kornblith, *On Reflection*, 26.

⁷ Kornblith, *On Reflection*, 19.

it seems to me that the distinction between reflective knowledge and animal knowledge is *no better grounded* than the distinction between consultative knowledge and non-consultative knowledge.⁸

One might construe Kornblith here as arguing from analogy, roughly: the distinct between consultative and non-consultative knowledge does not identify two kinds of knowledge; Sosa's distinction is analogous to that one; so, Sosa's distinction does not identify two different kinds of knowledge. But this construal does not get Kornblith's criticism quite right.

Sosa has labelled two distinct epistemic states as distinct kinds of knowledge. Kornblith is challenging why they deserve this label. The consultative knowledge/non-consultative case is intended as an illustrative example of two distinct epistemic states that do not deserve to be called distinct kinds of knowledge. Without any positive reason for thinking that Sosa's distinction is unlike the consultative/non-consultative distinction (or many others like it that could be provided), there is no reason for thinking that Sosa has identified two distinct kinds of knowledge. Kornblith's challenge (as we might call it) is to provide some reason for thinking that this distinction identifies two kinds of knowledge.⁹

Before responding to these two objections, let me mention a third possible objection that Kornblith does not clearly separate from the second, namely: *Sosa's distinction is not illuminative; it is not a distinction worth drawing*. He writes that

Not every well-defined distinction, however, is worth making. We could define two different sorts of knowledge, one sort acquired on even-numbered days of the month, and the other acquired on odd-numbered days, but there would be little point in making such a distinction. We need to know why the distinction between animal knowledge and reflection knowledge is an illuminating one.¹⁰

However, as his discussion at that point continues, the criticism shifts to the second criticism, that Sosa has not identified two kinds of knowledge, *not* that the distinction is not worth making or is not illuminating.

It is difficult to identify what argument Kornblith has for this criticism that is distinct from the second, because he does not clearly distinguish between the two. Nevertheless, I intend to understand him such that this third criticism rests upon the other two – *if* Sosa's distinction does not identify two kinds of knowledge, and *if* it does not even pick out a superior epistemic state with reflective knowledge, *then* it is not illuminating or worth drawing. Consequently,

⁸ Kornblith, *On Reflection*, 19, italics mine.

⁹ Conversation with Luis Oliveira and Keith DeRose was helpful here.

¹⁰ Kornblith, *On Reflection*, 15-6

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because I'll be arguing that the first two criticisms fail, I will not spend any time considering this one.

II. Responses

In this section I respond to Kornblith's criticism in reverse order.

II.1 Sosa's Distinction Does Not Identify Two Different Kinds Of Knowledge.

Kornblith's challenge is to provide some reason for thinking that Sosa's distinction identifies two kinds of knowledge. Sosa can rise to this challenge.

Sosa is a virtue epistemologist; this means, among other things, that it is a particular cognizer and her performances that are central to epistemic evaluation. For Sosa, knowledge is a kind of excellence performance of a cognizer.¹¹ Thus, for there to be two different kinds of knowledge, there would have to be two different kinds of skills that a cognizer can perform. But animal knowledge and reflective knowledge involve two different general kinds of skills that a cognizer can perform. (At the very least, Kornblith has given us no reason for thinking they are not.) So, Kornblith's challenge can be met: there is a reason for thinking that Sosa has identified two different kinds of knowledge.

Kornblith might object that there is a problem of proliferation here.¹² For it may seem as if this response attempts to meet Kornblith's challenge by allowing for two epistemic states to be different kinds of knowledge if they originated in different kinds of ways. But then

we will have as many different kinds of knowledge as there are processes of belief acquisition and retention. Surely this multiplies kinds of knowledge far beyond necessity.¹³

But this response avoids this problem of proliferation. For the response is not there is a different kind of knowledge for each different way of forming and retaining a belief. The suggestion is that there is a different kind of knowledge for different *kinds of skills*. Further, the kind of skill displayed by reflective knowledge can be found across multiple modalities such as (e.g.) perception or memory. This kind of skill is thus general in nature. Consequently, it does not thereby warrant a proliferation of kinds of knowledge for each way of forming

¹¹ See, *inter alia*, "Descartes and Virtue Epistemology," 117; *Reflective Knowledge*, 135; *A Virtue Epistemology*, 23, 31, 93.

¹² Cf. Kornblith, "Sosa on Human and Animal Knowledge," in *Ernest Sosa and His Critics*, ed. John Greco (Malden: Blackwell Publishing, 2004), 132.

¹³ Kornblith, "Sosa on Human and Animal Knowledge," 132; cf. Kornblith, *On Reflection*, 19.

and retaining beliefs. Kornblith's challenge can be met without undue proliferation by understanding knowledge as a kind of general skill.¹⁴

II.2 Reflective Knowledge Is Not Superior To Animal Knowledge.

Recall Kornblith's second criticism:

(P1) Reflective knowledge is superior to animal knowledge only if reflection produces more reliable beliefs.

(P2) Reflection does not produce more reliable beliefs.

(C1) So, reflective knowledge is not superior to animal knowledge.

I press two responses: Kornblith has not done enough to establish (P2), and (P1) is false.¹⁵

Kornblith dedicates an entire section of his book to defending (P2). However, his argument there does not establish (P2). He spends most of his time defending the thesis that introspective scrutiny about belief *p* is an unreliably way to determine whether or not the particular cognitive processes that produced *p* were reliable or due to (e.g.) some anchoring bias. This thesis is plausible, given the empirical evidence he cites, and I do not object to it. However, the problem is that establishing this thesis as true does not show (P2) is true. (P2) claims that *reflection* does not produce more reliable beliefs. This can be false even when *introspection* does not give us insight into the cognitive processes that produce those beliefs.

To begin with an analogy, because I am not a mechanic, paying attention to specific ways my car runs (e.g. the sounds it makes, how slowly it takes to break, etc.) does not give me any insight into the particular mechanics of my car (e.g. what sounds (if any) a crankshaft should be making, how my engine or fuel rod works). Nevertheless, paying attention to how my car runs can result in it running more reliably, since I might take it to a mechanic when I notice it is *not* running as it usually does. Furthermore, even though I am not a mechanic, I know that

¹⁴ Kornblith might object that we should conceive of knowledge as a natural kind (see his *Knowledge and Its Place in Nature* (Oxford: Clarendon Press, 2002)) and not as a skill, and knowledge conceived of in this way would not meet Kornblith's challenge. However, this objection would beg the question against Sosa. Furthermore, it would undermine the significance of Kornblith's criticisms. If one used a different conception of knowledge that Sosa, then perhaps some of the things Sosa says about knowledge will come out false – but this would not be particularly surprising and it would not be clear how this would be a relevant criticism of Sosa.

¹⁵ Kornblith considers three possible objections to (P1) – see *On Reflection*, 26-34 – but none are the ones I'll press.

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there are certain things I could do – e.g. filling it with the wrong kind of gas or trying to drive it underwater – that would result in it being more unreliable.

Similarly, there can be multiple ways in which the result of reflection can produce more reliable beliefs even though introspection does not give insight into particular cognitive processes. For instance, perhaps, by reflecting, I realize that many of the beliefs John has told me are actually false or improbable. Upon reflection, this might lead me to be more skeptical of John's testimony and thereby avoid error. Or perhaps I read two newspapers each day. By reflecting, I might keep myself from holding inconsistent beliefs upon the basis of the two newspapers. Indeed, by reflecting on information already available to me, I might realize that one of the newspapers is more reliable than the other and adopt a policy of only accepting what it says when the two conflict. Further, reflective scrutiny can make our beliefs more reliable in indirect ways. For instance, when pressed on a belief, I may not sit back and try to figure out what was going on inside my cranium; I may begin to do research and consult with other sources on that topic. Such research can increase the reliability of our beliefs.

To be clear, my purpose here is to undermine, not refute. This handful of examples is not intended to refute (P2) and thereby show that reflection does produce more reliable beliefs (how could a handful of examples do that?). Rather, I am merely illustrating the many ways in which reflection can produce reliable beliefs without utilizing introspection into the cognitive processes responsible for our beliefs. This undermines Kornblith's argument for (P2) – the defender of Sosa's distinction can concede the lousiness of introspection for certain tasks without thereby having to concede other positive roles that reflection can play.¹⁶

At this point, Kornblith might concede that his argument for (P2) is invalid, but now provide a different argument. I've conceded that introspection does not provide us particularly good insight into the cognitive processes responsible for the formulation of our beliefs. Kornblith might argue that that thesis is sufficient to show that we rarely – if ever – have reflective knowledge. For (he might argue) to have reflective knowledge, introspection must give us insight into the cognitive processes producing beliefs. He might cite Sosa himself:

¹⁶ Of course, defenders of some versions of epistemic internalism may not be able to concede this (see Kornblith, *Knowledge and Its Place in Nature*, chp. 4) for argument that they cannot). But I'm not defending epistemic internalism here, but the distinction between reflective and animal knowledge.

One has reflective knowledge if one's judgment of belief manifests not only such direct response to the fact known but also understanding of its place in a wider whole that includes one's belief and knowledge of it and *how these come about*.¹⁷

But since introspection cannot (or rarely does) provide insight into the cognitive processes that produce our beliefs, and reflective knowledge requires it to, there is rarely, if ever, any reflective knowledge. (Note that the conclusion of this argument, while formally consistent with there being two kinds of knowledge (animal and reflective), is still fairly damning for Sosa's view. For the hope of the distinction is to capture distinct epistemic states that people actually possess with some frequency.)

In response, this new argument assimilates Sosa's "how these come about" with the particular cognitive processes that might be studied by a psychologist or a brain scientist. But this assimilation is dubious, and, I think, a poor interpretation of Sosa. As some of the examples Sosa provides illustrate,¹⁸ his "how these come about" is not concerned with one's particular brain state but more general, coarse grained knowledge (acquired through experience) about sources of belief (e.g.) newspapers, vision in the rain, hearing when intoxicated, testimony from politicians, etc. Reflective knowledge requires one to reflect on these more coarse grained origins of one's beliefs. The empirical studies that Kornblith cites does not show reflection cannot do that.

My second criticism is that there is good reason for rejecting (P1), that reflective knowledge is superior to animal knowledge only if reflection produces more reliable beliefs. The problem is, roughly put, this: there are things of epistemic value that reflective scrutiny/knowledge can provide (and reliable belief need not) *even if* reflective scrutiny does not increase reliability. To see this, it is important to recall that, for Sosa, reflective knowledge includes seeing *how one's belief fits among others*. Seeing this brings with it other things of epistemic value both individually and communally. Let me briefly motivate each of these points.

First, seeing how one's belief fits with others can bring with it coherence, understanding, and explanation.¹⁹ For instance, by reflecting on one's beliefs and seeing how they fit together, one can reveal inconsistencies and expunge them – even if (as can occur) the original sources of the conflicting beliefs are highly

¹⁷ Sosa, "Knowledge and Intellectual Virtue," 240, italics mine.

¹⁸ For instance, the example immediately following the cited passage above in "Knowledge and Intellectual Virtue," 241; cf. Sosa, "Intellectual Virtue in Perspective," 278.

¹⁹ Sosa, *Reflective Knowledge*, 137.

reliable.²⁰ Thus, reflection can increase coherence (and truth over error) even if one's belief all originated in highly reliable sources.²¹ Further, by reflecting, one can see the necessity of seeking out multiple sources on some matter (e.g. an event), even if one's initial source was highly reliable. (After all, that initial source, while being highly reliable and not containing any errors, might nevertheless fail to include important information or over-emphasize other information.) Thus, reflection can increase understanding, even if one's initial beliefs originated in a highly reliable source. Finally, due to an increase in understanding, one can gain an increase in explanation. To explain something is to answer a why-question by picking out, from a range of information, the relevant information. By possessing reflective knowledge, one can better understand what piece of information is relevant for answering a why-question, even if that reflective knowledge does not (on its own) produce other reliably formed beliefs.

Second, seeing how one's beliefs fit with others can play a role in the spread of truth among a community. As Sosa correctly points out,²² knowledge occurs in a community. Part of the transmission of knowledge in a community may require more than mere animal belief. For instance, in academic and theoretical communities more generally, merely reliably formed belief is not sufficient – one needs to argue, explain, and provide coherent accounts of things. For instance, even if a new invention (e.g. the telescope) or a new model (e.g. of weather patterns) is reliable, a theoretical community may initially regard it with skepticism; in such a case, a theorist may have a great deal of animal knowledge, but more is required for the spread of knowledge among that community.²³ So, reflective knowledge can be superior to animal knowledge by bringing about other things of epistemic value besides reliability.

I do not belabor these points because I doubt that Kornblith disagrees. At one point,²⁴ he considers a specific scenario with two people, A and B, where the former has animal knowledge that p and the latter reflective knowledge that p . He concedes that, in the scenario,

²⁰ Note that this is not the same as merely updating one's beliefs as one receives new information, but reflection on one's beliefs without necessarily receiving new information.

²¹ Cf. Sosa, "Intellectual Virtue in Perspective," 291-2.

²² See, e.g., Sosa, *A Virtue Epistemology*, 93ff.; Sosa, "Intellectual Virtue in Perspective," 275.

²³ Jacob Canton suggested to me that perhaps Kornblith might think that these things of epistemic value can be "reduced" to reliability. Note that this suggestion, though, would amount to giving up (P2). For if reflective knowledge brought about these things of epistemic value, and those reduce just to reliability, then reflection would produce more reliable beliefs.

²⁴ Kornblith, "Sosa on Human and Animal Knowledge," 131.

reflection has produced epistemic benefits. It has, on this occasion, improved B's epistemic situation. I certainly do not wish to deny that this kind of thing can occur.²⁵

But if Kornblith does not deny that reflective knowledge, partly due to reflection, brings about all these epistemic benefits animal knowledge can lack, why does he assert (P1): reflective knowledge is superior to animal knowledge only if reflection produces more reliable beliefs?

The answer lies in what he says next:

How does having reflective knowledge that *p* put one in a better epistemic situation *with respect to p*? Thus far, the epistemic benefits we have noted in B's situation have to do with her knowing many other things *in addition to p*, but this, by itself, does not clearly show that her knowledge that *p* is in any respect superior to A's knowledge that *p*... For all that has been said, A's belief that *p* may have been produced by a far more reliable process than B's, even when we include the effects of B's reflection has on the overall reliability of the way in which she arrived at her belief that *p*.²⁶

On Kornblith's view, then, there are many things that a *set of beliefs* can have that are of epistemic benefit – e.g. reliability, coherence, understanding, etc. – but that when determining the epistemic superiority of a *single belief*, only one of those benefits, namely reliability, is relevant. In this way, he can concede that reflective knowledge can bring about epistemic values to sets of beliefs while still holding that for any *particular* belief that counts as reflective knowledge it is superior to its animal knowledge counterpart only if it was produced by a more reliable process.

There are two problems with this view. First, this looks like special pleading, and we need some principled reason why reliability is singled out. It would be one thing to claim that coherence, explanation, and understanding are not of any epistemic value.²⁷ But to claim that they are, but not relevant to determining the epistemic superiority of a single belief, is *ad hoc*.

Second, there are counterexamples to the idea that only reliability is relevant to determining the epistemic superiority of a belief. Suppose that A's belief that *p* is knowledge, and originates in a highly reliable source. Suppose, further, that B's belief that *q* originates in an even more reliable source, but that on this occasion, B's belief has been "gettierized," so that B's belief that *q* is mere

²⁵ Kornblith, "Sosa on Human and Animal Knowledge," 131.

²⁶ Kornblith, "Sosa on Human and Animal Knowledge," 131.

²⁷ Again, one might try to "reduce" these values to reliability, but as pointed out in fn. 23, this would be just to give up the second premise of the argument.

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justified true belief. Despite the fact that B's belief q originated in a more reliable process than A's belief that p , A's belief – constituting knowledge – is epistemic superior to B's belief, which does not constitute knowledge. So it cannot be that *only* reliability is relevant to determining the epistemic superiority of a belief. So, independent of worries about *ad hocery*, this view is false. Sosa's distinction still stands.²⁸

²⁸ Thanks to Jacob Canton, Dave Fisher, Hao Hong, Timothy Leitz, Tim O'Connor, Luis Oliveira, Harrison Waldo, Phil Woodward, and audiences at the 38th annual Midsouth conference and Western Michigan. Special thanks to Hilary Kornblith for helping me clarify some of my points.

NOTES ON THE CONTRIBUTORS

Jon Altschul is assistant professor in the Department of Philosophy at the Loyola University New Orleans. His research up until now has been focused on answering the general question of what makes us warranted in our ordinary, common beliefs about the world. His publications include “Vahid, Burge, and Perceptual Entitlement” (with Anthony Brueckner and Christopher Buford, *Metaphilosophy*, 2014), “Entitlement, Justification, and the Bootstrapping Problem” (*Acta Analytica*, 2012), and “Reliabilism and Brains in Vats” (*Acta Analytica*, 2011). Contact: jlaltsch@loyno.edu

Michael Da Silva is an SJD candidate at the University of Toronto Faculty of Law where he is a Vanier Canada Graduate Scholar, a CIHR Training Fellow in Health Law, Ethics and Philosophy and a Graduate Fellow in the Centre for Ethics. His philosophical research interests include ethics, legal philosophy, social and political philosophy and epistemology. His legal research focuses on public law, including (comparative) constitutional law. His other published works include pieces in the Canadian Journal of Law and Jurisprudence and Criminal Justice Ethics. Contact: mike.dasilva@mail.utoronto.ca.

Benoit Gaultier is currently a postdoctoral research fellow at the University of Helsinki, after having been a research assistant at the Collège de France. His main areas of interest are epistemology, philosophy of action, metaphysics, and pragmatism. He has several papers under review and forthcoming. He has two books forthcoming in September 2014: *Qu'est-ce que le pragmatisme?* (Paris, Vrin); *Connaître. Questions d'épistémologie contemporaine* (editor, with Jean-Marie Chevalier, Paris, Ithaque). Contact: benoitgaultier@hotmail.fr.

Franz Huber is an assistant professor in the Department of Philosophy at the University of Toronto. His research interests are in formal epistemology, general philosophy of science, and philosophical logic. With Jonathan Weisberg and many others he is editing *Ergo, An Open Access Journal of Philosophy*. His most recent articles include: “For True Conditionalizers Weisberg’s Paradox is a False Alarm” (*Symposion*, 2014), “What Should I Believe About What Would Have Been the Case?” (*Journal of Philosophical Logic*, 2014), and “New Foundations for Counterfactuals” (*Synthese*, 2014). Contact: franz.huber@utoronto.ca.

Moti Mizrahi is Assistant Professor in the Philosophy Department at St. John's University. He works in argumentation, epistemology, metaphilosophy, and philosophy of science. His recent publications include "Constructive Empiricism: Normative or Descriptive?" (*International Journal of Philosophical Studies*, forthcoming), "Don't Believe the Hype: Why Should Philosophical Theories Yield to Intuitions?" (*Teorema*, forthcoming), "Kuhn's Incommensurability Thesis: What's the Argument?" (*Social Epistemology*, forthcoming). "Does Conceivability Entail Metaphysical Possibility?" (with David R. Morrow, *Ratio*, 2014), "The Role of Justification in the Ordinary Concept of Scientific Progress" (with Wesley Buckwalter, *Journal for General Philosophy of Science*, 2014), and "Phenomenal Conservatism, Justification, and Self-Defeat" (*Logos & Episteme*, 2014). Contact: motimizra@gmail.com.

Timothy Perrine is a PhD candidate at Indiana University, Bloomington. His primary research interests are epistemology, philosophy of religion, and ethics. His most recent publications are "In Defense of Non-Reductionism in the Epistemology of Testimony" (*Synthese*, forthcoming), "Envy and Its Discontents" (with Kevin Timpe, in *Virtues and Their Vices*, Oxford University Press, 2014), and "Skeptical Theism, Abductive Atheology, and Theory Versioning" (with Stephen Wykstra, in *Skeptical Theism: New Essays*, Oxford University Press, 2014). Contact: tperrine@indiana.edu.

Michael S. Perry is a philosopher, lawyer, and author who currently resides in Gig Harbor, WA. He received his AB in Philosophy from Dartmouth College (2003) and his MA and Ph.D. in Philosophy from Johns Hopkins University (2005, 2009). He also holds a JD from the University of Michigan Law School (2012). He is academically interested in many areas of philosophy and law, and in particular inquiries into how we should understand an issue or domain of inquiry. Recent work has focused on epistemology and ethics. He is the author of *Epistemology in the Shadow of Pyrrhonism* (ProQuest, UMI Dissertation Publishing, 2011) and *Moral Dilemmas, Identity, and Our Moral Condition* (Algora Press, 2014). Contact: michael.shaw.perry@gmail.com.

Pierre Uzan is a researcher at laboratory SPHERE of History and Philosophy of Science, University Paris-Diderot/CNRS. His main areas of research are in Philosophy of Quantum Mechanics, Quantum Logic and Philosophy of Mind. He has suggested to explain the nature of psychophysical correlations in terms of (generalized) entanglement, without appealing to a concept of causality and

without identifying mind and brain. His recent publications include *Conscience et physique quantique* (ed. Vrin, Paris) and several articles bearing on the quantum-like modelling of the psychosomatic unity of the individual, like “On the nature of psychophysical correlations” (*Mind and Matter*, 2014). Contact: pierre.uzan@paris7.jussieu.fr.

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