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KNOWLEDGE-HOW AND EPISTEMIC LUCK

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ABSTRACT. Reductive intellectualists (e.g., Stanley & Williamson 2001; Stanley 2011*a*; 2011*b*; Brogaard 2008; 2009; 2011) hold that knowledge-how is a kind of knowledge-that. For this thesis to hold water, it is obviously important that knowledge-how and knowledge-that have the same epistemic properties. In particular, knowledge-how ought to be compatible with epistemic luck to the same extent as knowledge-that. It is argued, *contra* reductive intellectualism, that knowledge-how is compatible with a species of epistemic luck which is not compatible with knowledge-that, and thus it is claimed that knowledge-how and knowledge-that come apart.

1. REDUCTIVE INTELLECTUALISM

Epistemologists have typically insisted, following Gilbert Ryle (1946; 1949), on distinguishing between knowledge-how and knowledge-that. On Ryle's view, you count as knowing how to ride a bike, for example, so long as you possess the ability or disposition to do so successfully. Ryle's view is a paradigmatic form of what is called *anti-intellectualism—viz.*, the position that one knows how to ϕ in virtue of possessing some relevant ability or disposition; anti-intellectualism is, strictly speaking, a position about what *grounds* one's knowledge-how. Likewise (and conversely), *intellectualism* insists that one counts a knowing how to ϕ in virtue of possessing—rather than some relevant ability—some *propositional attitude* (e.g., knowledge) *vis-à-vis* ϕ -ing.¹

As John Bengson and Marc Moffett have observed, more fine-grained versions of intellectualism are available, and these map on to the very different answers intellectualists (*vis-à-vis* the *grounds* question) might offer to what they call the *nature question—viz.*, “What is the nature of

knowing how to φ (e.g., what is its analysis, definition or essence)?” (Bengson & Moffett 2011a, 163) Of course, a straightforward line the intellectualist can take here is to maintain that the nature of knowledge-how is essentially a relation between an agent and a proposition. Call an intellectualist who opts for this straightforward line a *reductive* intellectualist—on the reductive proposal, knowledge-how is not only grounded in, but just *is*, propositional knowledge.

It is in this reductive fashion that intellectualism is typically defended in the mainstream literature. But, given that the grounds and nature questions are independent,² there is the logical space for an intellectualist to maintain that, whilst one counts as knowing how to φ *in virtue of* possessing some propositional attitude *vis-à-vis* φ -ing, the *essence* of knowledge-how is best characterized as a relation between an agent and something other than a proposition (e.g., a way of φ -ing). Call such a view *non-propositional intellectualism*. This is precisely the kind of view Bengson and Moffett (2008; 2011a; 2011b) have carved out in a recent work; they term their view *objectualist intellectualism*.³

While we have some reservations about Bengson and Moffett’s non-propositional variety of intellectualism, our critical focus will be limited here to the comparatively more straightforward *reductive intellectualism* which has been prominently defended in the recent literature, particularly by Jason Stanley (2011a; 2011b).⁴

One thing common to all versions of reductive intellectualism is a commitment to the claim that knowledge-how should have the same epistemic properties as knowledge-that.⁵ As Stanley (2011a, 215)—the foremost proponent of the reductive view (hereafter, simply *intellectualism*)—observes, “[i]f knowing-how is a species of knowing that, the properties of knowing-that should be properties of knowing-how,” and this includes purely epistemological properties, such as resilience to undermining epistemic luck. One ubiquitous epistemological property attributed to propositional knowledge is that, put simply, it is incompatible with the sort of epistemic luck at play in Gettier-style cases. It is this incompatibility that explains why we can effectively challenge accounts of knowledge by showing that that we can generate Gettier-style cases on those accounts. If there aren’t Gettier-style cases for knowledge-how, then knowledge-how lacks an epistemological property that knowledge-that has—*viz.*, incompatibility with Gettier-style epistemic luck. It would thus follow, even by Stanley’s own lights, that “knowing how is not a species of knowing that.” (Stanley 2011a, 216)

Unsurprisingly, then, Stanley thinks that there *are* Gettier-style cases for knowledge-how. Consider the following example which he offers:

FLIGHT SIMULATOR: Bob wants to learn how to fly in a flight simulator. He is instructed by Henry. Unknown to Bob, Henry is a malicious imposter who has inserted a randomizing device in the simulator's controls and intends to give all kinds of incorrect advice. Fortunately, by sheer chance the randomizing device causes exactly the same results in the simulator as would have occurred without it, and by incompetence Henry gives exactly the same advice as a proper instructor would have done. Bob passes the course with flying colours. He has still not flown a real plane. Bob has a justified true belief about how to fly. But there is a good sense in which he does not *know* how to fly. (Stanley 2011a, 206)⁶

The idea is that just as in a standard Gettier-style case that afflicts propositional knowledge we have here a scenario in which the subject is cognitively successful but where his cognitive success is down to epistemic luck rather than being appropriately related to his cognitive agency. That is, Bob makes all the right moves when in the simulator, and that's why he passes his test. In this sense he is cognitively successful. But given the epistemic luck in play in Bob coming to make all the right moves, Stanley's claim is that he does not qualify as knowing how to fly. We thus have, claims Stanley, Gettier-style epistemic luck undermining knowledge-how in the just that way that Gettier-style epistemic luck undermines knowledge-that.

But this case is controversial, and many have the opposing intuition to Stanley about this case, in that they hold that Bob *does* know how to fly. Here, for example, is Ted Poston:

There is a good sense in which Bob *does* know how to fly. Bob's attempts to fly would be no less successful than the attempts of others that underwent a regular flight course. If Bob took the controls of the plane he would perform adequately [...] Bob's explanations of what to do in certain counterfactual situations would appear just as adequate as his peers trained at a normal facility. (Poston 2009, 744)

Poston is surely onto to something here, in that it seems at least as plausible to contend that Bob does come to acquire knowledge-how in this case as to contend that he doesn't. At the very least, this should prompt us to wonder whether knowledge-how is as susceptible to Gettier-style epistemic luck as knowledge-that. After all, that the agents in standard Gettier-style cases lack propositional knowledge is not generally in dispute.

Interestingly, Yuri Cath (2011) appeals to a structurally similar case to the one Stanley appeals to, but does so in an attempt to capture precisely the *opposite* insight that Stanley thought we should draw from FLIGHT INSTRUCTOR. Here is Cath's case:

LUCKY LIGHT BULB: Charlie wants to learn how to change a light bulb, but he knows almost nothing about light fixtures or bulbs. So he consults *The Idiot's Guide to Everyday Jobs*. Inside, Charlie finds an accurate set of instructions describing a light fixture and bulb, and the way to change a bulb. Charlie grasps these instructions perfectly. And there is a way, call it 'w₁', such that Charlie now

believes that w_1 is a way for him to change a light bulb, namely, the way described in the book. However, unbeknownst to Charlie, he is extremely lucky to have read these instructions. For the disgruntled author of *The Idiot's Guide* filled her book with misleading instructions. Under every entry she misdescribed the objects involved in that job, and described a series of actions that would not constitute a way to do the job at all. However, at the printers, a computer error caused the text under the entry for 'Changing a Light Bulb', in just one copy of the book, to be randomly replaced by new text. By incredible coincidence, this new text provided the clear and accurate set of instructions that Charlie would later consult. (Cath 2011, §1)

Cath contends that Charlie knows how to change a light bulb, but that he does not know that w_1 is a way for him to change a light bulb. Cath thus takes the moral of this case to be that knowledge-how comes apart from knowledge-that, and as he notes, “given the obvious similarities between the FLIGHT SIMULATOR and LUCKY LIGHT BULB cases, one might reasonably expect that our verdicts about whether Bob knows how to fly and whether Charlie knows how to change a light bulb should be the same.” (Cath 2011, §1) If Cath is right, then, plausibly, we have two cases—FLIGHT SIMULATOR and LUCKY LIGHT BULB—which suggest that knowledge-how is more resilient to undermining by Gettier-style epistemic luck than propositional knowledge, and this does not bode well for Stanley's intellectualism.

Those who don't already accept Stanley's intuition on the FLIGHT SIMULATOR case wouldn't be swayed by a similar plea here, as he seems well aware. Accordingly, Stanley (2011*b*) takes issue with Cath's case by appealing to an overgeneralization argument. He writes that “the problem with Cath's argument is that it is too general—if sound, it applies to many kinds of knowing-wh.”⁷ (Stanley 2011*b*, 179) Stanley's point is that if we construct a parallel case that holds fixed the epistemically relevant features of LUCKY LIGHT BULB but alters the epistemic state to knowledge-wh (specifically knowledge-*where*)—and makes the relevant issue whether Charlie knows *where* to purchase a light bulb—the intuition that Charlie possesses knowledge-*where* would be just as strong as that Charlie knows how to change light bulbs in LUCKY LIGHT BULB.⁸ But this would mean that it is not just knowledge-how which comes apart from knowledge-that in virtue of being resilient to Gettier-style epistemic luck, since what goes for knowledge-how on this score goes for knowledge-wh too.

Crucially, however, Stanley (2011*b*) has argued on independent linguistic grounds that knowledge-wh is propositional knowledge. Hence knowledge-wh should, like knowledge-how according to Stanley, be as susceptible to Gettier-style epistemic luck as propositional knowledge. Thus, unless Cath is willing to argue against Stanley's independent grounds for advancing that knowledge-wh is propositional knowledge—or unless he is willing to argue that propositional

knowledge is compatible with Gettier-style epistemic luck after all—it is a problem for Cath’s own view that his basis for attributing knowledge-how in the LUCKY LIGHT BULB would generate a corresponding attribution of knowledge-wh in an analogous case involving knowledge-where.

In effect, Stanley is posing his adversaries a dilemma. The first horn of the dilemma is the rejection of the claim that knowledge-wh is propositional knowledge. One who grasps this horn of the dilemma must be willing to take on Stanley’s linguistic arguments in favour of this claim, where this means also challenging (at least to some extent) the foundational work on the semantics of embedded questions that Stanley employs in claiming that one knows-wh only if one knows some proposition that is the answer to a contextually relevant question.⁹

Of course, Stanley’s opponent might wish to avoid what is entailed by the first horn, and so allow that knowledge-wh is propositional knowledge. But then the second horn of the dilemma arises, which itself splits into a further dilemma. The first horn of this dilemma is to deny that knowledge-how is present in the FLIGHT SIMULATOR and LUCKY LIGHT BULB cases; the second horn is to allow that propositional knowledge is compatible with Gettier-style epistemic luck. Since it is a platitude in epistemology that propositional knowledge is incompatible with Gettier-style epistemic luck, taking the latter route does not seem that plausible. One can thus see why there is a good basis, independently of judgments about cases which Stanley appeals to, for his claim that knowledge-how is lacking in the FLIGHT SIMULATOR and LUCKY LIGHT BULB cases.

2. INTERVENING AND ENVIRONMENTAL EPISTEMIC LUCK

We will be arguing that there is a way of motivating a distinction between knowledge-that and knowledge-how which, while appealing to epistemic luck, does not succumb to the dilemma just posed. In particular, in what follows we will grant Stanley for the sake of argument that knowledge-wh is propositional knowledge.¹⁰ We will also grant, in keeping with mainstream contemporary epistemology, that knowledge is incompatible with Gettier-style epistemic luck. More specifically, we will be taking it as given that knowledge involves *safe* true belief, where this means that when one knows one couldn’t have easily have been wrong.¹¹ This, after all, is just what is amiss in the Gettier-style cases, in that due to the epistemic luck involved the agent’s cognitive success could so very easily have been cognitive failure. We contend that even if one grants these two claims, one can still show, *contra* Stanley, that knowledge-how is more resilient to epistemic luck than knowledge-that,

and thus motivate the claim that knowledge-how is not propositional knowledge. In particular, we will be offering a basis for thinking that knowledge-how is more resilient to Gettier-style luck than knowledge-that which does not generalise to knowledge-wh, and which is thus compatible with Stanley's independent defence of the thesis that knowledge-wh is propositional knowledge.

First we need to highlight a distinction drawn in recent thinking in epistemology between two different types of Gettier-style epistemic luck—*intervening* and *environmental*. The standard type of Gettier-style epistemic luck is of the former variety, and concerns epistemic luck which 'intervenes' between the agent's cognitive performance and her cognitive success. To take a familiar case, imagine an agent who, in good cognitive conditions and so forth, sees what looks to be a sheep in a field and so believes on this basis that there is a sheep in the field. But suppose further that what our hero is in fact looking at is not a sheep but rather just a sheep-shaped object, such as a big hairy dog, which is obscuring from view a genuine sheep hidden behind.¹² Here we have cognitive success, in that the agent truly believes that there is a sheep in the field, and we also have cognitive performance, in that the agent is skilfully forming her belief that there is a sheep in the field. But the intervening epistemic luck in play means that the cognitive success is disconnected from the cognitive performance that led to the agent forming this belief. The belief so formed is thus unsafe, in that the agent could so very easily have believed falsely in these conditions (e.g., if the sheep that is hidden from view had wandered into another field), and so doesn't count as knowledge.

This is not the only way in which a belief can be Gettierised, however—i.e., such that it fails to qualify as knowledge in virtue of being unsafe. For imagine now that what our agent is looking at is a genuine sheep, but that she could so very easily have been looking at a mere sheep-shaped object (i.e., which isn't a sheep). Suppose, for example, that there are quite a few sheep-shaped objects in the vicinity, any one of which would have led our agent into falsely believing that there is a sheep in the field. Here we have cognitive success again, in that the agent's belief is true (since she is in fact looking at the one genuine sheep). And we have cognitive performance too, just like last time. Moreover, we have Gettier-style epistemic luck in play, in that the belief so formed is unsafe—forming the belief as she does, our agent could very easily have formed a false belief (e.g., if she had been looking at one of the sheep-shaped objects instead of the genuine sheep). But unlike the case previously described, the epistemic luck does not concern a disconnect between cognitive performance and cognitive success, since our agent really is seeing what she takes herself to see. Instead, the epistemic luck in play is purely *environmental*.¹³

This distinction is important because certain epistemic states which, like knowledge-that, are incompatible with the kind of intervening epistemic luck found in standard Gettier-style cases turn out to differ from knowledge-that in being *compatible* with environmental luck. For example, just this seems to be the case when it comes to the epistemic state of understanding why something is the case.

Consider the following example that has been offered in the literature, which concerns understanding why one's house burnt down.¹⁴ First consider a Gettier-style case involving intervening epistemic luck. Suppose an individual, Campbell, comes home to discover that his house has burned down, and he wants to understand why. Accordingly, he asks a nearby fire officer who is on the scene. Unbeknownst to Campbell, however, the person he is speaking to is not a real fire officer but rather someone on their way to a fancy dress party. Nonetheless, the fake fire officer doesn't let on that he is a fake, and offers Campbell a completely made-up explanation of why his house burned down—*viz.*, that the cause of the house burning down was faulty wiring. Let us stipulate that the explanation that Campbell is offered is, as it happens, entirely correct. Even so, Campbell surely cannot gain an understanding of why his house burned down from consulting a fake fire officer who is making up an answer to his question, even if that answer turns out to be true. For that matter, he can't come to know that his house burned down because of faulty wiring in this way either, since his belief so formed is unsafe. This example thus demonstrates that Gettier-style cases can be constructed for understanding-why. In particular, such cases illustrate the point that understanding-why shares with knowledge-that the property of being incompatible with intervening epistemic luck.

But now consider a variation of the case that involves environmental epistemic luck. Suppose again that Campbell is seeking to understand why his house burnt down and, again, asks an apparent fire officer who offers him the correct explanation. This time, however, let us stipulate that it is a genuine fire officer who Campbell speaks to. Imagine, however, that Campbell could have very easily asked someone who merely appeared to be a fire officer but who was fake, and who would have provided a false explanation (without revealing they are not in fact a fire officer). Perhaps, for example, the one real fire officer who Campbell spoke to was surrounded by fake fire officers on their way to a fancy dress party.

Campbell's true belief in this case that the house burned down because of faulty wiring is subject to environmental epistemic luck, and hence does not qualify as knowledge. In particular, given how he formed his belief he could very easily have formed a false belief, and so his belief so

formed is unsafe. Interestingly, however, the presence of environmental epistemic luck in this example, while preventing Campbell from gaining knowledge-that, seems entirely compatible with Campbell gaining understanding-why. After all, not only has he discovered the correct explanation of why his house burned down, but he also gained this explanation from someone authoritative in this regard. That he could so very easily have been given the wrong explanation appears to be entirely compatible with Campbell gaining understanding-why in this case.

Indeed, imagine that Campbell subsequently comes to discover that there was environmental epistemic luck in play in his acquisition of the explanation of why his house burned down. That is, he comes to discover that while the person he spoke to was a genuine fire officer, he could have very easily have spoken to a fake fire officer who would have had no idea what caused the fire but who would have nonetheless offered him a completely made up explanation. Would Campbell now regard his past self as lacking an understanding of why his house burned down? Surely not.¹⁵ And yet he surely would regard his past self as lacking knowledge that his house burned down because of faulty wiring.

Understanding-why thus comes apart from knowledge-that in that while both epistemic standings are incompatible with intervening epistemic luck, only the latter is incompatible with environmental epistemic luck. In order to see the relevance of this point for our concerns, consider the question of whether knowledge-why is present in these two cases.

We take it as uncontroversial that knowledge-why is lacking in the first case where intervening epistemic luck is involved. That is, Campbell surely cannot come to know why his house burned down by talking to a fake fire office who is concocting an explanation, even if that explanation turns out to be correct.¹⁶ What is interesting, however, is that knowledge-why also seems to be incompatible with environmental epistemic luck too, unlike understanding-why. For consider again the case of environmental epistemic luck just presented. Given that Campbell gained his belief about what caused his house to burn down from someone who could very easily have been a fake fire officer who would have offered a concocted explanation, it is hard to see why we would regard Campbell as possessing knowledge-why in this case. The crux of the matter is that knowledge-why, like knowledge-that, just doesn't seem to be the sort of epistemic standing that one can acquire in a lucky fashion. More specifically, to have genuine knowledge-why, your cognitive success ought to be safe, and yet this is precisely what is lacking in this case (in common with the case of intervening epistemic luck).

The significance of this point for our purposes should now be apparent. Recall that Stanley's masterstroke against those who claim that there are no Gettier-style cases for knowledge-how turned on an overgeneralisation strategy. That is, he argued that the basis for this claim overgeneralised in that it entailed that knowledge-wh was not subject to Gettier-style cases either, and yet Stanley took himself to have demonstrated, on independent grounds, that knowledge-wh is propositional knowledge (which *is* subject to Gettier-style cases). Thus Stanley's opponent is faced with the unpalatable choice of either arguing against his thesis that knowledge-wh is propositional knowledge, or else claiming that propositional knowledge is not subject to Gettier-style cases either.

It should be clear that there is a potential way of avoiding Stanley's overgeneralisation strategy. We noted above that while understanding-why comes apart from knowledge-that in virtue of being incompatible with environmental epistemic luck, this claim did not generalise to knowledge-why. But what if knowledge-how is like understanding-why on this score, such that it is compatible with environmental epistemic luck, but not in a way that implied that knowledge-wh was also compatible? We would then have the distinction between knowledge-how and knowledge-that which Stanley claims is unavailable, but we would not be at the mercy of his overgeneralisation strategy since this claim would be entirely compatible with his thesis that knowledge-wh is propositional knowledge. This is precisely the possibility that we shall now be exploring, and defending.

3. KNOWLEDGE-HOW AND ENVIRONMENTAL EPISTEMIC LUCK

Let's reconsider Cath's LUCKY LIGHT BULB case. So described, it is a case of intervening epistemic luck, and as such it elicits conflicting responses, as noted above. But imagine now a version of that case where it is specifically environmental epistemic luck that is involved. So rather than Charlie gaining his instructions on how to change a bulb from a fake guide, albeit by chance getting the correct information, suppose that the guide itself is entirely reliable and authoritative, but that Charlie could so very easily have opted for a fake guide instead. Imagine, say, that Charlie has a shelf-full of guides before him, all but one of which is fake, and that had he opted for one of the fake guides he would have ended up with incorrect information about how to change a bulb. Does Charlie know how to change a light bulb in this case?

We take it that once the example is redescribed so that it is specifically environmental epistemic luck involved, then the judgment that Charlie knows how to change a light bulb becomes very strong. After all, he gains his correct information about how to do this task from an authoritative source, unlike in the case that Cath describes. Thus, the intuition that Charlie has knowledge-how in this case ought to be more compelling than it is in the LUCKY LIGHT BULB case.

Moreover, we can apply the ‘past self’ test here that we used above with understanding-why to reinforce this claim. Imagine that Charlie subsequently discovers that there was environmental epistemic luck in play in his acquisition of the information about how to change a bulb. Would he have any basis for thinking that his past self did not know how to change a bulb? Surely not. After all, in discovering that it is merely environmental epistemic luck in play he also thereby discovers that the source of this information was authoritative.

Interestingly, we suggest that we get a very different result if we run the ‘past self’ test on Cath’s LUCKY LIGHT BULB case. For if Charlie subsequently found out that the source of his information about how to change a light bulb was completely fake, then we contend that he would *not* regard his past self as knowing how to change a light bulb, but as merely happening to stumble by luck onto the correct information.¹⁷ This suggests, in line with Stanley’s view, but *contra* Poston and Cath, that such cases are not instances of knowledge-how.

We think we can diagnose the conflicting intuitions at play regarding the LUCKY LIGHT BULB case. There are two features of knowledge-how that must be borne in mind when considering cases like this. The first is that there is more to knowledge-how than the mere ability to perform the target action. In the LUCKY LIGHT BULB case it is not in question that Charlie can change a light bulb, but that should not by itself settle the question of whether Charlie knows how to change a light bulb. In considering the LUCKY LIGHT BULB case we should thus specifically reflect on whether Charlie is merely able to change a light bulb, as opposed to knowing how to change a light bulb.

The second feature of knowledge-how that should be kept in mind when considering the LUCKY LIGHT BULB case is the point we have just noted, which is that knowledge-how is compatible with environmental epistemic luck. Once we realise that knowledge-how is compatible with environmental epistemic luck, then we should consider whether an initial inclination to ascribe knowledge-how in this case is being influenced by the fact that there is epistemic luck in play, albeit not the kind of epistemic luck which we have shown to be clearly compatible with knowledge-how.

We suggest that with these two points about knowledge-how made explicit, it is now much less clear that there is knowledge-how in the LUCKY LIGHT BULB case. Sure, Charlie can change a light bulb. But, more than this, does he *know* how to change a light bulb? That's not so clear. Moreover, once we remember that knowledge-how is consistent with environmental epistemic luck, then this goes some distance towards explaining why we might initially think that the epistemic luck in play is compatible with knowledge-how, even while nonetheless contending that knowledge-how is lacking in this case.

Thus far, then, we regard the distinction between environmental and intervening epistemic luck as lending support to Stanley's proposal, in that this distinction can be used to buttress his claim that knowledge-how is susceptible to standard (i.e., intervening) Gettier-style epistemic luck in just the same way as knowledge-that. Where we depart from Stanley's view is in our claim that knowledge-how, unlike knowledge-that, is compatible with non-standard (i.e., environmental) Gettier-style epistemic luck.

But what of Stanley's overgeneralisation strategy? Will our basis for claiming that knowledge-how is distinct from knowledge-that generate the result that knowledge-wh is distinct from knowledge-that too? We don't think so. In order to see this, it will be useful to examine the variation on the LUCKY LIGHT BULB case that Stanley offers which focuses on knowledge-where:

LUCKY LIGHT BULB II: Charlie wants to learn where to purchase light bulbs, but he knows almost nothing about stores in his city of Syracuse. To remedy this situation Charlie consults *The Idiots Guide to Stores in Syracuse*. Inside, he finds an accurate description of directions to a store at which one can buy light bulbs. Charlie grasps these directions perfectly. And so there is a place, call it '*p*', such that Charlie now believes that *p* is a place he can buy light bulbs, namely, the place described in the book. However, unbeknownst to Charlie, he is extremely lucky to have read these instructions, for the disgruntled author of *The Idiots Guide* filled her book with misleading instructions. Under every entry she intentionally misdescribed the stores, and described a series of directions that would lead to parking lots and residential homes. However, at the printers, a computer error caused the text under the entry for "Purchasing Light Bulbs", in just one copy of the book, to be randomly replaced by new text. By incredible coincidence, this new text provided the clear and accurate set of instructions that Charlie would later consult. (Stanley 2011*b*, 179)

So described, this scenario involves intervening epistemic luck, just like the original LUCKY LIGHT BULB case. As such, it isn't quite relevant for our purposes, since we are not claiming that knowledge-how is compatible with intervening epistemic luck. We thus need to adapt this case so that it involves environmental epistemic luck. This is easily done. All we need to do is tweak LUCKY LIGHT BULB II along the same lines that we tweaked Cath's LUCKY LIGHT BULB to make it a case of environmental epistemic luck. That is, we adapt the example so that Charlie is now

finding out where to purchase light bulbs by reading a guide that is entirely accurate, but we stipulate that he could so very easily have picked up one of the many fake guides available to him. Stanley's overgeneralisation claim would thus be that insofar as we wish to maintain that knowledge-how is compatible with environmental epistemic luck, then we will be required to also maintain that knowledge-wh—in this case knowledge-where—is also compatible with environmental epistemic luck. That will force us to either do battle with Stanley's independently argued claim that knowledge-wh is propositional knowledge, or else maintain that knowledge-that is also compatible with environmental epistemic luck.

Crucially, however, we maintain that it is far from obvious that knowledge-where is compatible with environmental epistemic luck, especially when compared with knowledge-how. In order to see this, try the 'past self' test on this case. If Charlie were to subsequently discover that environmental epistemic luck was involved in him gaining the right directions to the light bulb store, would he still regard his past self as *knowing* where to go?¹⁸ We think this is not at all clear.¹⁹ At the very least, it seems right to say that Charlie will be much less inclined to judge that his previous self had knowledge-where than before. In contrast, we noted above that there seems no temptation at all for Charlie to regard his past self as lacking knowledge-how in the corresponding case.

The upshot is that once we confine ourselves to the claim that knowledge-how is compatible only with environmental epistemic luck, then the prospects for Stanley's overgeneralisation strategy look far less promising.

4. CONCLUDING REMARKS

The recent resurgence of reductive intellectualist accounts of knowledge-how owe a great deal to the linguistic arguments that can be proposed in their favour. We've attempted to move the debate back to epistemology.²⁰ In particular, we've argued that knowledge-how differs in its epistemic properties from propositional knowledge. Because the reductive intellectualist, in insisting that knowledge-how just is propositional knowledge, is committed to the view that the epistemic properties of knowledge-how and propositional knowledge should not come apart, the argument we've offered effectively drives a wedge between knowledge-how and propositional knowledge. Moreover, this is a wedge that stands *even if* the reductive intellectualist is right on independent grounds that knowledge-wh is a kind of propositional knowledge.²¹

REFERENCES

- Audi, R. (1997). 'The Place of Testimony in the Fabric of Knowledge and Justification', *American Philosophical Quarterly* 34, 405-22.
- Bengson, J. & Moffett, M. (2007). 'Know-How and Concept Possession', *Philosophical Studies* 136, 31-57.
- (2011a). 'Non-Propositional Intellectualism', *Knowing How: Essays on Knowledge, Mind, and Action*, (eds.) J. Bengson & M. Moffett, 161-90, Oxford University Press, Oxford.
- (2011b). 'Two Conceptions of Mind and Action: Knowing How and the Philosophical Theory of Intelligence', *Knowing How: Essays on Knowledge, Mind, and Action*, (eds.) J. Bengson & M. Moffett, 3-58, Oxford University Press, Oxford.
- Bengson, J., Moffett, M., & Wright, J. (2009). 'The Folk on Knowing How', *Philosophical Studies* 142, 24-50.
- Brogaard, B. (2008a). 'Attitude Reports: Do you Mind the Gap?', *Philosophy Compass* 3, 93-118.
- (2008b). 'Knowledge-The and Propositional Attitude Ascriptions', *Grazer Philosophische Studien* 77, 147-90.
- (2009). 'What Mary Did Yesterday: Reflections on Knowledge-wh', *Philosophy and Phenomenological Research* 78, 439-67.
- (2011). 'Knowledge-How: A Unified Account', *Knowing How: Essays on Knowledge, Mind, and Action*, (eds.) J. Bengson & M. Moffett, 136-60, Oxford University Press, Oxford.
- Burge, T. (1993). 'Content Preservation', *Philosophical Review* 102, 457-88.
- Carter, J. A., & Pritchard, D. H. (2013). 'Knowledge-How and Cognitive Achievement', *manuscript*.
- Cath, Y. (2011). 'Knowing How Without Knowing That', *Knowing How: Essays on Knowledge, Mind and Action*, (eds.) J. Bengson & M. Moffett, 113-35, Oxford University Press, Oxford.
- Chisholm, R. (1977). *Theory of Knowledge* (2nd Ed.), Prentice-Hall, Englewood Cliffs, NJ.
- Gettier, E. (1963). 'Is Justified True Belief Knowledge?' *Analysis* 23, 121-23.
- Goldman, A. (1976). 'Discrimination and Perceptual Knowledge', *Journal of Philosophy* 73, 771-91.
- Groenendijk, J., & Stokhof, M. (1982). 'The Semantics Analysis of Wh-Complements', *Linguistics and Philosophy* 5, 175-233.
- Hawthorne, J. (2000). 'Implicit Belief and *A Priori* Knowledge', *Southern Journal of Philosophy* 38, 191-210.
- Hetherington, S. (2013). 'There Can Be Lucky Knowledge', *Contemporary Debates in Epistemology* (2nd Ed.), (eds.) M. Steup & J. Turri, 164-76, Blackwell, Oxford.
- Kallestrup, J., & Pritchard, D. H. (2011). 'Virtue Epistemology and Epistemic Twin Earth', *European Journal of Philosophy* (Online First, DOI: 10.1111/j.1468-0378.2011.00495.x).
- (2012). 'Robust Virtue Epistemology and Epistemic Anti-Individualism', *Pacific Philosophical Quarterly* 93 (2012), 84-103.
- (2013). 'Robust Virtue Epistemology and Epistemic Dependence', *Knowledge, Virtue and Action: Putting Epistemic Virtues to Work*, (eds.) T. Henning & D. Schweikard, ch. 11, Routledge, London.
- Karttunen, L. (1977). 'Syntax and Semantics of Questions', *Linguistics and Philosophy* 1, 3-44.
- Lackey, J. (2008). *Learning from Words: Testimony as a Source of Knowledge*, Oxford University Press, New York.
- Longworth, G. (2008). 'Linguistic Understanding and Knowledge', *Noûs* 42, 50-79.
- Luper, S. (1984). 'The Epistemic Predicament', *Australasian Journal of Philosophy* 62, 26-50.

- (2003). ‘Indiscernability Skepticism’, *The Sceptics: Contemporary Essays*, (ed.) S. Luper, 183-202, Ashgate, Aldershot.
- McDowell, J. (1994). ‘Knowledge by Hearsay’, *Knowing from Words: Western and Indian Philosophical Analysis of Understanding and Testimony*, (eds.) B. K. Matilal & A. Chakrabarti, 195-224, Kluwer, Dordrecht, Holland.
- Poston, T. (2009). ‘Know-How to be Gettiered?’, *Philosophy and Phenomenological Research* 79, 743-7.
- Pritchard, D. H. (2002). ‘Resurrecting the Moorean Response to the Sceptic’, *International Journal of Philosophical Studies* 10, 283-307.
- (2005). *Epistemic Luck*, Oxford University Press, Oxford.
- (2007). ‘Anti-Luck Epistemology’, *Synthese* 158, 277-97.
- (2009a). *Knowledge*, Palgrave Macmillan, Basingstoke, UK.
- (2009b). ‘Knowledge, Understanding and Epistemic Value’, *Epistemology (Royal Institute of Philosophy Lectures)*, (ed.) A. O’Hear, 19-43, Cambridge University Press, Cambridge.
- (2012a). ‘Anti-Luck Virtue Epistemology’, *Journal of Philosophy* 109, 247-79.
- (2012b). ‘In Defence of Modest Anti-Luck Epistemology’, *The Sensitivity Principle in Epistemology*, (eds.) T. Black & K. Becker, 173-92, Cambridge University Press, Cambridge.
- (2013). ‘There Cannot be Lucky Knowledge’, *Contemporary Debates in Epistemology* (2nd Ed.), (eds.) M. Steup & J. Turri, 152-64, Blackwell, Oxford.
- (Forthcoming). ‘Knowledge and Understanding’, *Virtue Scientia: Essays in Philosophy of Science and Virtue Epistemology*, (ed.) A. Fairweather, Springer, Dordrecht, Holland.
- Pritchard, D. H., Millar, A., & Haddock, A. (2010). *The Nature and Value of Knowledge: Three Investigations*, Oxford University Press, Oxford.
- Ryle, G. (1971 [1946]). ‘Knowing How and Knowing That’, reprinted in his *Gilbert Ryle: Collected Papers* (vol. 2), 212-25, Barnes & Noble, New York.
- (1949). *The Concept of Mind*, Chicago University Press, Chicago.
- Sainsbury, R. M. (1997). ‘Easy Possibilities’, *Philosophy and Phenomenological Research* 57, 907-19.
- Sosa, E. (1999). ‘How to Defeat Opposition to Moore’, *Philosophical Perspectives* 13, 141-54.
- Stanley, J. (2011a). ‘Knowing (How)’, *Noûs* 45, 207-38.
- (2011b). *Know How*, Oxford University Press, Oxford.
- Stanley, J., & Williamson, T. (2001). ‘Knowing How’, *Journal of Philosophy* 98, 411-44.
- Welbourne, M. (1979). ‘The Transmission of Knowledge’, *Philosophical Quarterly* 29, 1-9.
- Williamson, T. (2000). *Knowledge and its Limits*, Oxford University Press, Oxford.

NOTES

- ¹ We are following here Bengson & Moffett's (2011*a*, 162-4) useful characterisation of these positions. See also Bengson & Moffett (2011*b*).
- ² The questions are logically independent in the following sense: how one answers one question does not logically commit one to endorsing a particular response to the other question. As Bengson & Moffett (2011*a*, 164) elaborate: "Traditionally, propositionalism and dispositionalism have gone hand-in-hand with intellectualism and anti-intellectualism, respectively. But an intellectualist need not accept propositionalism, and an anti-intellectualist need not accept dispositionalism. The debates (however they are labelled) are conceptually distinct."
- ³ On Bengson & Moffett's most recent proposal the answer to the "nature question" is that: "The relation [characterising the nature or essence of knowledge how] is a nonpropositional, non-behavioural-dispositional objectual attitude relation (e.g., a *knowing of* relation) and the relatum is a non-propositional item (e.g., a way of φ -ing)." (Bengson & Moffett 2011*a*, 164)
- The full account, which they call *objectualist intellectualism*, claims that: "to know how to act is to understand a way of so acting, where such objectual understanding involves grasping (a possibly implicit) conception that is poised to guide the successful, intentional performance of such an act—hence, to possess a cognitive state with a distinctively practical character." (Bengson & Moffett 2011*a*, 161)
- ⁴ It is worth noting that Stanley's (2011*b*, ch. 1) critique of Ryle isn't so much an argument against the Rylean view as it is a critique of Ryle's regress arguments, which Ryle adduced against the intellectualist position. For some of the other key defences of reductive intellectualism, see Stanley & Williamson (2001) and Brogaard (2008*a*; 2008*b*; 2009; 2011). The core element of Brogaard's reductivist view is the "predicate view" according to which (*à la* Stanley) knowledge-how comes out as a special case of knowledge-wh; accordingly, for Brogaard, one knows how to φ just in case there is a way w such that one knows that w is how to φ . In Brogaard's more recent (2011) work, she opts for what she calls a 'conciliatory' position that is compatible with her earlier reductive proposal while at the same time allowing that "*there are knowledge states which are not justification-entailing and knowledge states which are not belief-entailing.*" (2011, 1) With that in mind we take ourselves to be challenging Brogaard's view only insofar as she is maintaining her earlier reductivist line (which aligns very closely with Stanley's proposal).
- ⁵ It is, of course, cogent for Bengson & Moffett to allow that knowledge-how and knowledge-that come apart since they have different natures which are characterised by different kinds of relations. In particular, the essence of knowledge-that is a relation between an agent and a proposition, while the essence of knowledge-how is a relation between an agent and a non-propositional object.
- ⁶ This example actually originates from an earlier article which Stanley co-authored with Williamson—see Stanley & Williamson (2001, 435). Nonetheless, in order to simplify the discussion we will henceforth refer to this case as Stanley's example.
- ⁷ We are using "knowledge-wh" in this paper in a way that refers to constructions such as "knowledge-where" and "knowledge-when." Stanley of course thinks that knowledge-how should ultimately be understood as a kind of knowledge-wh. Our usage of knowledge-wh will not presuppose this, and accordingly, refers to the (non-knowledge-how) varieties of knowledge-wh. Following Stanley, the paradigmatic case we consider of knowledge-wh is knowledge-where. We are grateful to an anonymous reviewer for pressing us on this point.
- ⁸ We describe the case that Stanley offers to illustrate this point below.
- ⁹ See, for example, Karttunen (1977) and Groenendijk & Stokhof (1982). We should clarify that when we talk here of 'taking on' Stanley's linguistic arguments we mean *engaging with the linguistic premises* that Stanley appeals to. By arguing that knowledge-how comes apart from knowledge-that, we are ultimately in *conflict* with Stanley's suggestion that we should give a unified treatment of the truth-conditional semantics of knowledge-how and other knowledge-wh ascriptions, even though we don't challenge this move on linguistic grounds—e.g., our premises are based on epistemological considerations. We are grateful to an anonymous reviewer for pressing us on this point.
- ¹⁰ As we clarified in endnote 7, we are referring to knowledge-wh constructions that do not include knowledge-how—e.g., knowledge-where.
- ¹¹ Versions of the safety requirement for knowledge have been offered by a number of authors, including Luper (1984; 2006), Sainsbury (1997), Sosa (1999), Williamson (2000), and Pritchard (2002; 2005; 2007; 2012*a*; 2012*b*). For a comprehensive and up-to-date discussion of the merits of the safety condition for knowledge, see the exchange between Pritchard (2013) and Hetherington (2013).
- ¹² This example is essentially the one offered by Chisholm (1977, 105).
- ¹³ The case so described is essentially a variant on the 'barn-façade' example, as originally proposed, in print, by Goldman (1976), who in turn credits it to Carl Ginet. The distinction between environmental and intervening epistemic

luck is due to Pritchard (2009a, chs. 3-4; 2009b; 2012a). See also Pritchard, Millar & Haddock (2010, chs. 2-4) and Kallestrup & Pritchard (2011; 2012; 2013).

¹⁴ See Pritchard (2009a, ch. 7; 2009b, *forthcoming*) and Pritchard, Millar & Haddock (2010, ch. 4).

¹⁵ This result is striking because the normal response to learning that the correctness of one's true belief was down to environmental luck is to deny that one originally satisfied the conditions for knowing. In this respect, learning this new piece of information clearly affects one's judgment about one's own (previous) epistemic standing *vis-à-vis* the target proposition. This reaction conforms to the platitude that knowledge is incompatible with the kind of environmental luck taken to undermine knowledge in barn façade style cases. In the case of understanding, as opposed to knowledge, it is hard to see how this additional piece of information pertaining to the acquisition of the understanding in question is (as opposed to the knowledge case) relevant to whether one originally understood. This is not, however, the reaction we would predict if we took understanding why to be (like knowledge-that) incompatible with environmental luck.

¹⁶ This judgment aligns with a standard view in the epistemology of testimony—e.g., Welbourne (1979), McDowell (1994), Audi (1997), and Burge (1993)—concerning the transmission of epistemic properties. Put simply, the view states that, for A to transmit knowledge by testimony to B, it is a necessary condition that A knows the target proposition herself. Accordingly, a testimonial recipient can't come to know that *p* on the basis of hearing that *p* from someone who was, in fact, merely guessing that *p*; the same insight indicates, *mutatis mutandis*, that one fails to count as understanding why something is so when the explanation is given by a speaker who is merely making up an explanation and accordingly lacks the relevant understanding herself. See Lackey (2008) for a recent challenge to this standard view (albeit not a challenge which would allow that testimony based on mere guesswork can legitimately generate testimonial knowledge, which is the salient point for our purposes).

¹⁷ The epistemic relevance of this new information (elicited by the past-self test) parallels the relevance of learning, in the original Gettier (1963) cases, that it is down to intervening luck that the target belief is correct.

¹⁸ The natural response here is to take the consideration that one could easily have been wrong as relevant to one's knowledge-where in a way that mirrors the relevance such information will have *vis-à-vis* one's would be propositional knowledge when discovering (say) that the genuine barn one had identified was surrounded by barn façades.

¹⁹ One might worry that this invites a kind of *reductio*—namely, that we allow that Charlie could know how to get to a store without knowing where a store is. But this strikes us as a *reductio* to our view only if the following is also a *reductio*: that Charlie could know how to screw in a lightbulb (by, say, consulting the one book on a shelf that has accurate instructions, nearby misleading books) while nonetheless having the relevant item/s of would-be propositional knowledge acquired from the book undermined by environmental luck. But to find the latter problematic one would have to deny that one could know how to do something in the absence of also (propositionally) knowing some way of doing it—but *this* will be problematic then only if one already assumes the intellectualist view. In sum, that a view has a consequence that entails the falsity of intellectualism isn't itself a *reductio* but rather an expected consequence of any anti-intellectualist view. We are grateful to an anonymous reviewer for pressing us on this issue.

²⁰ Indeed, we think there is more to be said on this score. Specifically, we think that there is an interesting story to be told about how the notion of a *cognitive achievement* is relevant to this debate (and which we think further supports the critical line on reductive intellectualism which we offer here). See Carter & Pritchard (2013) for the details.

²¹ Thanks to Yuri Cath, Ted Poston, and Jason Stanley for feedback on an earlier version of this paper, and to Cheng-Hung Tsai for useful discussion of related topics. Thanks also to three anonymous reviewers from *Noûs* for detailed comments.