

# Entitlement, epistemic risk and scepticism\*

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## ABSTRACT

Crispin Wright maintains that the architecture of perceptual justification is such that we can acquire justification for our perceptual beliefs only if we have antecedent justification for ruling out any sceptical alternative. Wright contends that this principle doesn't elicit scepticism, for we are non-evidentially entitled to accept the negation of any sceptical alternative. Sebastiano Moruzzi has challenged Wright's contention by arguing that since our non-evidential entitlements don't remove the epistemic risk of our perceptual beliefs, they don't actually enable us to acquire justification for these beliefs. In this paper I show that Wright's responses to Moruzzi are ineffective and that Moruzzi's argument is validated by probabilistic reasoning. I also suggest that Wright cannot answer Moruzzi's challenge without weakening the support available for his conception of the architecture of perceptual justification.

*Keywords:* epistemic entitlement; epistemic risk; perceptual justification; scepticism; Crispin Wright; Roger White, Duncan Pritchard.

## 1. Introduction

Some of Crispin Wright's ideas have been playing a pivotal role in recent epistemological conversation. Wright maintains that the architecture of perceptual justification is such that we can acquire justification for our perceptual beliefs only if we have antecedent justification for ruling out any sceptical alternative. He contends that this fact doesn't elicit scepticism, for we are non-evidentially entitled to accept the negation of any sceptical alternative. Sebastiano Moruzzi has challenged Wright's contention by arguing that since our non-evidential entitlements don't remove the epistemic risk of our perceptual beliefs, they don't actually enable us to acquire justification for these beliefs. In this paper I show that Wright's responses to Moruzzi are ineffective and that Moruzzi's argument is validated by probabilistic reasoning. I also suggest that Wright cannot

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answer Moruzzi's challenge without weakening the support available for his conception of the architecture of perceptual justification.

This is the paper's structure: in §2 I detail Wright's conception of the architecture of perceptual justification and Wright's entitlement theory. In §3 I review Moruzzi's objection. In §4 I criticize Wright's responses to Moruzzi. In §5 I argue that Moruzzi's objection is validated by Bayesian reasoning. In §6 I draw my conclusions.

## 2. Wright's epistemology of perception

Wright (2004, 2007 and 2014) contends that the architecture of perceptual justification<sup>1</sup> is such that:<sup>2</sup>

(PJ) A subject S's experience as if  $p$  gives S (defeasible) justification for believing  $p$  only if S has antecedent justification for accepting  $\sim sh$ , where  $\sim sh$  is the logical negation of any sceptical alternative<sup>3</sup>  $sh$  to  $p$ .<sup>4</sup>

(PJ) raises at least two concerns. To begin with, it looks at odds with everyday epistemic practices; one may thus doubt that (PJ) is true. Ordinarily, the reasons we attribute to ourselves or others for holding perceptual beliefs make no reference to sceptical alternatives. Imagine you have an experience as if the cat is on the mat. You would normally answer the question 'What reason do you have to believe that the cat is on the mat?' by saying 'I see it'. Responding 'I see it and have independent reason to rule out that I'm deceived by the Matrix' would appear out-of-place (cf. Pryor 2000 and McGrath 2013).

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<sup>1</sup> By 'justification' I will always mean *propositional* (rather than *doxastic*) justification.

<sup>2</sup> Epistemic conservatives like White (2006) and Neta (2010) defend similar principles.

<sup>3</sup> By 'sceptical alternative' I refer to *global* sceptical hypothesis like the Cartesian demon scenario or the Matrix scenario.

<sup>4</sup> (PJ) is standardly (or very often) attributed to Wright (cf. White 2006, Silins 2007, Neta 2010 and Silva 2010). Wright seems sometimes to endorse an alternative principle, according to which S's experience as if  $p$  gives S justification for *claiming that S has justification for believing  $p$*  only if S has antecedent justification for accepting  $\sim sh$ . In this paper I criticize Wright interpreted as a supporter of (PJ). For discussion about these two alternative readings of Wright's conception of the structure perceptual justification and their implications see McGlynn (2017).

The second concern is that (PJ) prompts perceptual scepticism (cf. Pryor 2000 and Schiffer 2004). Consider a subject  $S$  experiencing as if ( $P$ ) the cat is on the mat. Suppose  $SH$  is the proposition that  $P$  is false but the Matrix makes  $S$  hallucinate as if  $P$ .<sup>5</sup> The sceptic may adduce (PJ) to argue that  $S$ 's experience as if  $P$  gives  $S$  justification for believing  $P$  only if  $S$  has antecedent justification for accepting  $\sim SH$ . The sceptic will insist that  $S$  cannot have this antecedent justification. For any *a posteriori* evidence  $S$  might happen to possess can be conjectured to be in turn a hallucinatory state caused by the Matrix. Furthermore,  $S$  doesn't have *a priori* evidence for  $\sim SH$ . So  $S$  has no evidence justifying her acceptance of  $\sim SH$ . The sceptic will conclude that  $S$ 's experience as if  $P$  cannot justify  $S$ 's belief that  $P$  and—by generalizing this example—that  $S$ 's experiences cannot justify any of  $S$ 's perceptual beliefs.

To address the first concern, Wright has argued that the epistemological views that disallow (PJ), like Pryor (2000 and 2004)'s dogmatism, are in various ways problematic<sup>6</sup> (cf. Wright 2007). The only direct argument—and I think the most forceful case—for the truth of (PJ) is nonetheless a Bayesian one due to White (2006), who defends a view of the architecture of perceptual justification similar to Wright's. Let me outline White's argument, as I will use it later on. White adopts an entrenched model that construes epistemic justification as rational confidence. Let  $\text{Pr}$  be a probability function interpreted subjectively.  $\text{Pr}(p)$  expresses  $S$ 's rational confidence that  $p$ .  $\text{Pr}(p|q)$  expresses  $S$ 's rational confidence that  $p$  conditional on  $S$ 's learning  $q$ . Suppose  $E$  is the proposition that  $S$  has an experience as if ( $P$ ) the cat is on the mat, and  $SH$  is the proposition that  $P$  is false but the Matrix makes  $S$  hallucinate as if  $P$ . Since  $SH$  entails  $E$ , if  $S$  learns  $SH$ ,  $S$  must be certain that  $E$ . Hence  $\text{Pr}(E|SH) = 1$ . Since  $S$  shouldn't expect to experience as if the cat on the mat,  $\text{Pr}(E) < 1$ . Thus  $\text{Pr}(E|SH) > \text{Pr}(E)$ . This inequality implies that  $\text{Pr}(\sim SH|E) < \text{Pr}(\sim SH)$ . Furthermore, since  $P$  entails  $\sim SH$ ,  $\text{Pr}(P|E) \leq \text{Pr}(\sim SH|E)$ . The last two inequalities imply by transitivity that  $\text{Pr}(P|E) < \text{Pr}(\sim SH)$ . This formula says that if  $S$  learns  $E$ ,  $S$ 's confidence in  $P$  must remain strictly smaller than  $S$ 's prior

<sup>5</sup> I use small letters for propositional variable and capital letters for propositional constants.

<sup>6</sup> For instance, they would produce *easy justification* and infringe probability principles.

confidence in  $\sim SH$ . Thus, S's learning  $E$  can make  $S$  rationally confident of  $P$ 's truth only if  $S$  is antecedently rationally confident of  $\sim SH$ 's truth. This shows that S's experiencing as if  $P$  can give S justification for believing  $P$  only if S has antecedent justification for accepting  $\sim SH$  (cf. 2006: 534-534). This argument can be reformulated to apply to any perceptual proposition  $p$ , any proposition  $e$  stating that S experiences as if  $p$ , and any correlated sceptical alternative  $sh$ . The conclusion is that

$$(PC) \Pr(p|e) < \Pr(\sim sh).$$

(PC) vindicates (PJ).

Although Wright often construes epistemic justification as rational confidence (see for instance 2014: 233-234), he hasn't explicitly adduced (PC) to support (PJ). Wright (2007: 42) has nevertheless levelled a Bayesian objection to Pryor's dogmatism consisting of a variant or incomplete version of White's argument.<sup>7</sup> So Wright would endorse this argument. Note that (PJ) takes S's evidence to be S's *experience as if p*, whereas (PC) takes S's evidence to be S's *reflective belief* that ( $e$ ) she has an experience as if  $p$ . One could question whether S's belief that  $e$  constitutes a reliable model of S's experience as if  $p$  in epistemic evaluations (cf. Moretti 2016). Wright nevertheless doesn't distinguish between one's experience and one's reflective belief that one has an experience when discussing scepticism (cf. 2002, 2004, 2007 and 2014). Wright seems to share White (2006: 353) and Silins (2007: 120n17)'s conviction that one's experiences and one's reflective beliefs about one's experiences are interchangeable in most epistemic contexts.

To address the second concern—the worry that (PJ) elicits scepticism—Wright (2004, 2007 and 2014) admits that there is no or very little evidence in support of propositions like  $\sim SH$ . Yet he argues that there exists a type of *non-evidential* justification—called by him *entitlement*—that all

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<sup>7</sup> The objection—which Wright attributes to Schiffer (2004)—says that the dogmatist is committed to maintaining that, for any  $p$  and  $e$ ,  $\Pr(p|e)$  must be sufficiently high, but that she cannot provide a justification for the required value of  $\Pr(\sim sh)$  and other priors.

rational subjects possess by default for *accepting* the logical negation of any sceptical alternative.<sup>8</sup> Acceptance is an attitude more inclusive than belief. Belief entails acceptance but the reverse is false. Wright acknowledges that an entitlement to accept  $\sim SH$  is not one to *believe*  $\sim SH$ . For it is dubious that S could rationally believe a proposition with no or very little evidence for its truth (cf. 2004: 176). This thesis is widely held in epistemology nowadays (cf. Chignell 2017: §5). Wright suggests that the type of acceptance licensed by S's entitlements is *rational trust*, or a very similar attitude (cf. 2004: 194).

Wright's thesis that we are entitled to accept propositions like  $\sim SH$  has attracted criticism of various types (see McGlynn 2017 for a survey). For instance, some authors contend that what Wright calls entitlement isn't *epistemic* justification (cf. Pritchard 2005 and Jenkins 2007). Wright (2014) has made a good effort to address most of these objections. In the following, I concentrate on an important criticism made in discussion by Sebastiano Moruzzi (cf. Wright 2004: 208n 26), which I think hasn't properly been addressed so far.

### 3. Moruzzi's objection

Moruzzi's challenge exploits a notion of *epistemic risk* introduced by Wright himself. Wright emphasizes that whenever S accepts a proposition  $p$  the truth of which is insufficiently supported by her evidence, S runs a risk—the one of accepting a proposition as true that is actually false. Since this type of risk is incompatible with S's *justifiedly believing* and *knowing*  $p$ , Wright calls it *epistemic* risk. More accurately, the relation that Wright claims to hold between epistemic risk and epistemic justification is this: S's accepting  $p$  is epistemically risky if and only if S's evidence doesn't suffice to justify her believing  $p$ . Note that S's accepting  $p$  when  $p$  is insufficiently supported by evidence would be epistemically risky even if S's acceptance were justified by an *entitlement* to  $p$ . This is so because this entitlement of S would not rest on or produce any *evidence*

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<sup>8</sup> More generally, for Wright, we are entitled to accept certain *hinge propositions* inclusive of these negations.

for  $p$ 's truth. For example, Wright (2004: 208-209) acknowledges that S's accepting  $\sim SH$  would be epistemically risky despite S's entitlement to  $\sim SH$ .

Moruzzi's objection rests on the intuition that for any  $p$  and correlated sceptical alternative  $sh$ , the epistemic risk of  $\sim sh$  transmits to  $p$ . The objection says that since S's accepting  $\sim sh$  is epistemically risky despite S's entitlement to  $\sim sh$ , S's accepting  $p$  is also epistemically risky despite S's experiencing as if  $p$ . Consequently, S's justification for  $p$  depending on S's experience as if  $p$  (if any) cannot sustain S's belief that  $p$ . If this is true, S's entitlements might enable S to *trust* perceptual propositions, but they cannot enable S to *believe* them. The sceptical challenge invited by (PJ) would remain unanswered in this case.

#### 4. Analysis of Wright's responses

Wright (2004) and Wright (2014) have respectively given Moruzzi's objection two different responses. In both papers Wright insists that no epistemic risk transmits from  $\sim sh$  to  $p$  but the reasons he adduces go in opposite directions. I now criticize both responses in turn.

Wright (2004: 207-209) argues that the intuition that the epistemic risk of  $\sim sh$  transmits to  $p$  is flawed because it relies on a false assumption.

Since the risk involved is that of acceptance of a proposition without knowledge of or evidential [justification] for its truth, the idea that the risk transfers from  $[\sim sh]$  to  $p$  is just the contrapositive of the idea that knowledge and evidential [justification] transmit from  $p$  to  $[\sim sh]$ . So interpreted, then, the worry about [epistemic risk] is just a version of the discredited assumption that [justification] is unrestrictedly transmissive. (2014: 229)

Let's unpack this condensed explanation. The expression 'evidential justification' refers to justification depending on evidence (i.e. a belief or an experience) sufficient to sustain belief. Recall that  $p$  entails  $\sim sh$ . Wright (2002, 2003 and 2007) has argued that evidential justification doesn't always transmit across entailment. S's justification for  $p$  resting on evidence  $e$  transmits across the

entailment from  $p$  to  $q$ —according to Wright—just in case (i) S has justification for believing  $p$  from  $e$ , (ii) S knows that  $p$  entails  $q$ , and (iii) S has justification for believing  $q$  *in virtue of* the truth of both (i) and (ii). Wright claims that (iii) remains unsatisfied whenever S’s acquiring justification for believing  $p$  from  $e$  requires S to have *antecedent* justification for accepting  $q$ . Suppose for instance S has two *identical* copies,  $H$  and  $H^*$ , of *Hamlet*.  $O$  is the disjunctive proposition that *this* book looks like  $H$  or  $H^*$ .  $A$  is the proposition the book is actually  $H$ .  $B$  is the proposition that the book is *not*  $H^*$ . S’s acquiring justification for believing  $A$  from  $O$  requires S to have antecedent justification for accepting  $B$ . Suppose that this requirement is met and that (i) S learns  $O$  thereby acquiring justification for believing  $A$ . Also suppose that (ii) S knows that  $A$  entails  $B$ . In these circumstances—according to Wright (2002, 2003 and 2007)—it is intuitive that S cannot acquire justification for believing  $B$  *in virtue of* the truth of (i) and (ii). So (iii) is false. This is a case of transmission failure. If (PJ) is true, the entailment from  $p$  to  $\sim sh$  should also instantiate transmission failure, for S’s acquiring justification for believing  $p$  from her experience as if  $p$  requires S to possess antecedent justification for accepting  $\sim sh$  (cf. Wright 2007).

My best interpretation of Wright’s passage quoted above is this: if you have the impression that the epistemic risk of  $\sim sh$  transmits to  $p$ , this is only because you *mistakenly* presuppose that evidential justification is unrestrictedly transmissive so that any evidential justification for  $p$  must transmit to  $\sim sh$ . In fact, if you presuppose this and realize that S doesn’t have evidential justification for  $\sim sh$  because  $\sim sh$  is epistemically risky, you are bound to conclude—on pain of contradiction—that S doesn’t have justification for believing  $p$  either, which means that  $p$  is also epistemically risky.

This diagnosis is misguided because it confuses S’s justification for  $\sim sh$  that S *acquires upon experiencing as if*  $p$  with S’s *antecedent* justification for  $\sim sh$  resting on S’s mere entitlement to  $\sim sh$ . Suppose you endorse both (PJ) and Wright’s entitlement theory but presuppose that evidential justification is unrestrictedly transmissive. Imagine you realize that S lacks *antecedent*

justification for believing  $\sim sh$ . Given your presupposition, you can still conclude without contradiction that S has justification for believing  $\sim sh$ —namely, evidential justification transmitted to  $\sim sh$  from  $p$ . In fact note that this justification transmitted to  $\sim sh$  is not *antecedent* justification for believing  $\sim sh$ , which S lacks, but justification that S is supposed to acquire when she experiences as if  $p$  and deduces  $\sim sh$  from  $p$ . Since you can conclude that S has evidential justification for  $\sim sh$ , you aren't bound to maintain that S lacks evidential justification for  $p$ , so that  $p$  is epistemically risky. This shows that the intuition that  $\sim sh$ 's epistemic risk transmits to  $p$  doesn't depend on presupposing (mistakenly or not) that evidential justification is unrestrictedly transmissive.

Wright (2014: 228-235) has given Moruzzi's objection a novel response. It says that no epistemic risk transmits from  $\sim sh$  to  $p$  because  $\sim sh$  is *not* epistemically risky after all. Also this response appears flawed to me.<sup>9</sup>

Although Wright (2014) endorses (PJ), in this paper he concedes that evidential justification—when suitably qualified—*transmits* from  $p$  to  $\sim sh$ . Wright contends that (PJ) blocks the transmission of two types of justification. Firstly, no justification transmitted from  $p$  to  $\sim sh$  can be a *first-time* justification for accepting  $\sim sh$ . For S can acquire justification for  $p$  from experiencing as if  $p$  only if S has *already* justification for accepting  $\sim sh$ . Furthermore, no justification transmitted to  $\sim sh$  from  $p$  can *raise*  $\sim sh$ 's 'rational credibility'. For 'whatever limit there was to the rational credibility of [ $\sim sh$ ] as an object of trust ..., it remains as an upper bound on its rational credibility as an object of belief based on the appearance that [ $p$ ]' (2014: 233).<sup>10</sup> Wright argues that, nevertheless, (PJ) *doesn't* debar evidential justification from transmitting from  $p$  to  $\sim sh$  if the justification is neither a first time justification for accepting  $\sim sh$  nor one that boosts  $\sim sh$ 's

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<sup>9</sup> I put forward my diagnosis more hesitantly this time, as some of Wright's claims are less than crystal clear in this case.

<sup>10</sup> This claim is vindicated by White's model, as  $\Pr(\sim sh|e) < \Pr(\sim sh)$ .



credibility. Drawing from Hawthorne (2004: 39-40) and McGlynn (2014), Wright contends that this transmission can persuasively take place through a two-stage inference: suppose S has evidential justification for  $p$ . This justification will first transmit to the disjunction  $p \vee \sim sh$ , entailed by  $p$ . This is so, for Wright, because it is compelling that any justification for believing either disjunct of a disjunction is by itself justification for believing the disjunction. S's justification for  $p \vee \sim sh$  will then transfer to  $\sim sh$ , which is *a priori equivalent* to the disjunction (cf. 2014: 231-233). Wright thinks that since S is entitled to  $\sim sh$ , S will acquire justification for believing  $p$  from her experience as if  $p$ , and this evidential justification will transfer to  $\sim sh$ . This would show that Moruzzi's challenge ultimately *dissolves*, as 'we no longer have the assumption in place that there can be no evidential [justification] for [ $\sim sh$ ]' (2014: 235).<sup>11</sup> In other words, we no longer have the assumption in place that  $\sim sh$  is epistemically risky.

This response to Moruzzi puts the cart before the horse. Wright contends that evidential justification *can* transmit from  $p$  to  $\sim sh$ . Suppose his explanation is correct. Evidential justification *will* transmit from  $p$  to  $\sim sh$  only if S does have evidential justification for  $p$  in the first instance. But Moruzzi's objection was precisely that S couldn't have this justification. Given that S's entitlement to  $\sim sh$  cannot remove  $\sim sh$ 's epistemic risk, and this risk—according to Moruzzi—transmits to  $p$ ,  $p$  must be epistemically risky when S experiences as if  $p$ . So S's justification for  $p$  based on S's experience as if  $p$  (if any) will be unable to sustain S's belief that  $p$ . Hence, there will be no evidential justification to be transmitted from  $p$  to  $\sim sh$  in the first instance.

## 5. Transmission of epistemic risk

Although Wright's responses to Moruzzi are ineffective, we cannot conclude yet that Moruzzi's objection goes through. For Moruzzi's claim that  $\sim sh$ 's epistemic risk transmits to  $p$  hasn't been

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<sup>11</sup> Wright maintains that (what he calls) the *leaching problem* dissolves, but Moruzzi's challenge is the only version of the leaching problem analysed in his paper (cf. 2014: 228-229).

substantiated. In this section I will show that this claim can be validated through (PC) once the standard probabilistic account of risk is presupposed. Since this account has recently been challenged, before proceeding any further I would like to dwell on this issue.

The term ‘risk’ has been standardly taken to refer to *the probability of an unwanted event*, where this probability is normally assessed on a body of relevant evidence. This usage is for instance exemplified by the statement that, given the relevant medical evidence, the risk that a smoker’s life is shortened by some smoking-related disease is about  $\frac{1}{2}$  (cf. Hansson 2018).<sup>12</sup> It might look self-evident that our judgements about risk track probability. Pritchard (2015 and 2016) has nevertheless challenged this thesis with an apparent counterexample.

#### (BOMB)

Case 1: An evil scientist has rigged up a large bomb, which he has hidden in a populated area. If the bomb explodes, many people will die. There is no way of discovering the bomb before the time it is set to detonate. The bomb will only detonate, however, if a certain set of numbers comes up on the next national lottery draw. The odds of these numbers appearing is fourteen million to one. It is not possible to interfere with this lottery draw.

Case 2: An evil scientist has rigged up a large bomb, which he has hidden in a populated area. If the bomb explodes, many people will die. There is no way of discovering the bomb before the time it is set to detonate. The bomb will only detonate, however, if a series of three highly unlikely events obtains. First, the weakest horse in the field at the Grand National, Lucky Loser, must win the race by at least ten furlongs. Second, the worst team remaining in the FA Cup draw, Accrington Stanley, must beat the best team remaining, Manchester United, by at least ten goals. And third, the queen of England must spontaneously choose to speak a complete sentence of Polish during her next public speech. The odds of this chain of events occurring are fourteen million to one. It is not possible to interfere with the outcomes of any of the events in this chain. (Pritchard 2015: 441)

Pritchard observes that although the unwanted event—the bomb’s detonating—is equally likely in both cases, its risk in Case 1 is intuitively higher than in Case 2. For we have the feeling that, despite the detonation triggering events have equal chances in both cases, the detonation triggering

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<sup>12</sup> A refinement of this conception, adopted in professional risk management and economics, interprets ‘risk’ as referring to the *expectation value* of a possible negative event, which is the product of the event’s probability and some measure of its severity (cf. Hansson 2018). To avoid sterile complications, I follow Pritchard (2015 and 2016) and Backer (2018) in setting aside this technical notion.

event in Case 1 *could easily happen*. All that is needed for this to materialize is simply that a few numbered balls be extracted in a particular sequence. In contrast, the detonation triggering event in Case 2 looks like something that could *not* easily happen. For too many weird things should take place together to secure the upshot.

To explain our intuitions about risk elicited by cases like (BOMB), Pritchard develops a modal conception of risk alternative to the probabilistic one. Pritchard explicates the notion of easy possibility by exploiting the familiar idea that possible worlds are more or less similar to the actual world. He submits that an event could easily happen if it takes place in worlds that are very similar to the actual. In this account, the degree of risk of an unwanted event is proportional to its modal distance from to the actual world, rather than its likelihood. Precisely, the degree of risk of a proposition  $p$  describing a given event is determined by the degree of closeness to the actual world of the closest worlds in which  $p$  is true: the closer these worlds, the higher the risk. Suppose now that  $P$  states that the bomb is detonating. Since  $P$  is true in very close worlds in Case 1, but only in remote worlds in Case 2,  $P$  proves more risky in Case 1 than in Case 2.

As Bricker (2018) observes, Pritchard's modal account, if working, would explain cases in which our judgements *seem* to track probability, since probability and modal ordering are often correlated. (For example, note that your serious bodily injuring yourself from playing chess is both a very improbable event and one that happens only in very remote worlds.) The modal account of risk would thus be capable of handling cases that the probabilistic account cannot handle but also cases that appear to suggest that risk tracks probability.

It is far from clear, however, that Pritchard's account constitutes "the correct analysis of risk" or that it should be preferred to the probabilistic account. Pritchard's reasons to reject the probabilistic account primarily hinge on our intuitive judgments about risk elicited by (BOMB). Pritchard presumes that we make these judgments essentially because we apply an implicit, non-probabilistic notion of risk. But one might question this presumption. After all, our judgments might

simply stem from psychological factors like heuristics and cognitive biases, and they might be no evidence that our pre-theoretical notion of risk is similar to that outlined by Pritchard. For instance, note that the degree of probability of the detonation triggering event in Case 2 is just stipulated—no explanation of how it has been worked out is offered. Since the numerical value supplied by Pritchard looks terribly far-fetched, it is perhaps natural that we (or our sub-personal systems) tend to *ignore* that piece of information. If this is true, psychology can offer various explanations of why we end up judging that the unwanted event is less risky in Case 2 than in Case 1. Some explanations are compatible with the probabilistic account of risk. For instance, Kahneman and Tversky (1974) have shown that there is a positive correlation between how easy a subject simulates (i.e. mentally pictures) an event and how *probable* she estimates that the event is. Note that the detonation triggering event of Case 2 is far less easy to simulate than the one in Case 1.

The modal account of risk has also counterintuitive consequences that the probabilistic account doesn't imply. Suppose you are about to flip a fair coin, and that you have bet £1000 on heads, while your opponent has bet £1000 on tails. If you win, you get £1000, otherwise you lose £1000.<sup>13</sup> Before seeing the outcome, you should judge the event that the coin lands tails to be considerably risky. The modal account can explain this: that event is risky because the coin lands tails in very close possible worlds. Imagine that the coin lands heads. Once you know this, you should no longer judge the event that the coin lands tails to be risky. For its chance has dropped to *zero*. Yet, on the modal account, you are still rationally required to judge that this event is risky. For in very close possible worlds the coin does land tails. More generally, on this account, any event that *could have* easily happened but did *not* actually happen must be taken to be risky. This doesn't match the intuitive idea of risk.

Producing a thorough assessment of the modal account of risk would take us too far afield. Let me only add that Pritchard (2015 and 2016) has attempted to defend his account by showing that it can illuminate (BOMB) but also by describing independent supporting evidence available in

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<sup>13</sup> If don't value money, replace it with anything else you value.

psychology and cognitive sciences. Bricker (2018) has nonetheless described further empirical evidence that looks incompatible with Pritchard's modal account. Importantly, Bricker (2018) has also detailed an imaginary case similar to (BOMB) that prompts judgments about risk that appear unexplainable by both the modal account and the probabilistic account. Thus, this interesting dispute is still far from being settled.

My view is that to investigate whether epistemic risk transmits from the negation of a sceptical hypothesis  $\sim sh$  to a correlated perceptual hypotheses  $p$ , we don't need to produce "the correct analysis of risk". There might be no such analysis. Perhaps our pre-theoretical conception of risk is partly incoherent or indeterminate and admits of more than just one analysis or precisification. To investigate whether or not epistemic risk transmits, we only need to rely on a notion of risk sufficiently close to the one that Wright and Moruzzi presuppose in their discussion. The probabilistic notion of risk appears to be well suited to this role.

When Wright makes statements about the risk of accepting propositions, he appears to refer to the standard probabilistic conception. For he never mentions possible worlds or closeness relations. It is also noteworthy that if Wright decided to adopt Pritchard's modal conception of risk, he could no longer use the notion of epistemic risk that he presupposes in his papers. For Wright could no longer stipulate that whenever S's evidence doesn't justify S's believing a proposition, S's accepting it is *epistemically* risky. The problem would be that many evidentially unjustified propositions would turn out not to be risky *tout court*. To see this, remember that Wright holds that our perceptual beliefs are normally justified. Thus Wright is committed to taking the actual world to be largely as it appears to be, and any sceptical alternative to be true only in remote possible worlds. Consider now any sceptical scenario  $sh$ . If Wright adopted Pritchard's modal conception of risk, Wright should acknowledge that although S's evidence doesn't justify S's believing  $\sim sh$ , S's accepting  $\sim sh$  is not risky after all, and so—*a fortiori*—it is not epistemically risky. Since  $\sim sh$  is false only in remote possible worlds.

Let me now show that once the probabilistic account of risk is presupposed, Moruzzi's claim that epistemic risk transmits can be validated through (PC). Take any perceptual proposition  $p$ , a proposition  $e$  stating that S experiences as if  $p$ , and any correlated sceptical alternative  $sh$ . The degree of risk that  $\sim sh$  is false—expressed by  $RS_F(\sim sh)$ —can be identified with  $Pr(sh)$ , where  $Pr$  is a probability function interpreted subjectively.<sup>14</sup> The degree of risk that  $p$  is false given  $e$ —expressed by  $RS_F(p|e)$ —can be identified with  $Pr(\sim p|e)$ . Since  $RS_F(\sim sh) = Pr(sh)$  and  $RS_F(p|e) = Pr(\sim p|e)$ , it is easy to show that (PC)  $Pr(p|e) < Pr(\sim sh)$  is equivalent to:

$$(RS) RS_F(p|e) > RS_F(\sim sh).$$

(RS) states that the degree of risk that  $p$  is false given  $e$  is strictly higher than the degree of risk that  $\sim sh$  is false independent of  $e$ . (RS) validates Moruzzi's claim that  $\sim sh$ 's epistemic risk transmits to  $p$ . To see this, suppose that  $r$  is a threshold value of epistemic risk. In other words, suppose that whenever  $r$  is exceeded by a proposition, the risk that it is false is so high that S's believing that proposition would be unjustified. (RS) entails that if  $RS_F(\sim sh) > r$ , then  $RS_F(p|e) > r$ . That is to say, if S's accepting  $\sim sh$  on the basis of a non-evidential entitlement (and so prior to learning  $e$ ) is epistemically risky, S's accepting  $p$  upon learning  $e$  is also epistemically risky.

## 6. Concluding remarks

Since it is plausible that the epistemic risk of  $\sim sh$  transmits to  $p$ , Wright's entitlement theory appears unable to neutralize the sceptical challenge arising from (PJ). Wright might still have some space for manoeuvre though. He could try to argue that White's Bayesian model is unreliable or misleading. For instance, he might contend that probability calculus is ill-suited to model our

<sup>14</sup> Risk is usually interpreted as referring to the *objective* probability or *chance* of an event. Nevertheless, objective probability can in principle be translated into subjective probability because, for every proposition  $q$ , any rational subject S must conform her degree of confidence in  $q$  to the chance of  $q$  once S knows this chance, in accordance with Lewis' Principal Principle.

rational confidence when we reflect on outlandish conjectures like those adduced by the sceptic (cf. Weatherson 2007).<sup>15</sup> As already suggested, Wright could also challenge the assumption at the heart of White's model that one's experience and one's reflective belief that one has an experience are relevantly similar in terms of justifying power (cf. Moretti 2016). If responses like these were to succeed, however, Wright should drop the apparently convincing case for (PJ) made by White. One way or another, Wright's epistemology of perception would be endangered.

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<sup>15</sup> Weatherson (2007) argues that sceptical conjectures (and their negations) are *uncertain* rather than *risky*—in accordance with Keynes (1937)'s distinction—and that standard probability calculus cannot model uncertainty.

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