Closure, Underdetermination, and the Peculiarity of Skeptical Scenarios – Guido Tana

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Abstract

Epistemologists understand radical skepticism as arising from two principles: Closure and Underdetermination. Both possess intuitive prima facie support for their endorsement. Understanding how they engender skepticism is crucial for any reasonable anti-skeptical attempt. The contemporary discussion has focused on elucidating the relationship between them to ascertain whether they establish distinct skeptical questions and which of the two constitutes the ultimately fundamental threat. Major contributions to this debate are due to Brueckner, Cohen, and Pritchard. This contribution aims at defending Brueckner's contention that underdetermination expresses the fundamental skeptical threat and that the closure-based argument can ultimately be reduced to it, at least concerning skeptical contexts. This will be achieved by undermining Cohen's objections to Brueckner on both counts. Cohen's argument endorses a picture of evidential underdetermination, which, while apt for non-skeptical contexts, cannot be applied to radical skepticism. A comparison with a case of scientific underdetermination is developed to argue for this idea. Our argument is then applied to the principle equivalence issue and to objections against it. It is then shown how this analysis possesses a distinctive effect on our understanding of the skeptical threat and the assessment of successful anti-skeptical strategies.

1. Introduction

Radical skepticism in contemporary epistemological discussion is understood as having two distinct sources, the Closure principle and the Underdetermination principle. Both express crucial epistemic resources for justification and knowledge whose rejection implies a revisionary project to a significant degree. Hence, the analysis of the skeptical arguments based on these principles is a reasonable requirement of any anti-skeptical attempt worth its' salt. In the literature, this analysis has focused on two main lines of investigation. The first is to understand which of the two principles generates the more fundamental skeptical threat to clarify what is required for a wholesale refutation of radical skepticism. The second thread concerns whether the two principles and corresponding arguments are as distinct as

they are presumed to be. An answer to this latter question would establish whether a single unified strategy can suffice to quell skeptical doubts or whether more than one argument is needed to refute skepticism.

The relationship between the two principles – and between the corresponding arguments – takes center-stage in the literature to accomplish this task. Most of the debate has arisen from Anthony Brueckner's analysis (1994, 2005) and the criticism raised against it by Stewart Cohen (1998). Brueckner argued for the pre-eminence underdetermination-based argument and suggested the logical equivalence of the two principles, at least concerning skeptical concerns. Cohen has taken the opposite route, arguing against logical equivalence between closure and underdetermination and for the pre-eminence of closure as the principle which establishes the ultimate skeptical threat. Alongside these two influential accounts, Duncan Pritchard (2005a, 2015) traced a middle way between them. Pritchard argues for the independence of the two arguments and advocates the need for a 'biscopic' anti-skeptical strategy. However, he has also maintained – contra Cohen – that underdetermination might be the more resilient of the two due to its establishing an epistemically weaker conclusion.

Skeptical arguments relying on both principles crucially engage matters of evidential support. It is no surprise then that the discussion on these two principles has focused on what our evidence licenses us to establish vis-à-vis the skeptical possibility. However, something crucial has been overlooked within this approach. Both underdetermination and closure are principles that also deal with ordinary epistemic evidence we are privy to in everyday endeavors and contexts. Therefore, it is implicitly assumed that evidential support relations undergo no significant change when skeptical scenarios are taken into account. This paper will offer an argument against this blanketing approach by providing an objection to Cohen's argument in its being covertly committed to this tendency. When the peculiarity of the rational and evidential constraints characterizing the skeptical scenario is dutifully

recognized, Brueckner's insight that the underdetermination problem poses the more general and fundamental issue is vindicated. In addition, the proposed reading supports the idea that the two principles are logically equivalent, *at least concerning skepticism*. The outcome establishes that anti-skeptical proposals that dispense from dealing with the underdetermination problem cannot provide a genuine refutation of skepticism.

The paper is structured as follows: the next section introduces the two principles and the corresponding skeptical arguments. Section 3 presents some intuitive considerations concerning their relationship and Brueckner's arguments for underdetermination's fundamentality and logical equivalence. Section 4 details Cohen's counter-analysis. Section 5 targets a specific aspect of Cohen's argument upon which much of his stance relies, proposing a counterexample concerning how the evidential support relation is conceived across ordinary contexts and concerning skepticism. More specifically, it is argued that the way evidential support is understood in ordinary cases of justification cannot be applied seamlessly to skeptical scenarios due to how these affect the evidential support our beliefs can enjoy. This allows a refutation of the crucial element of Cohen's argument. In Section 6, this result is applied to the issue of logical equivalence between the two principles, Brueckner's insight that Cohen and Pritchard failed to capture. Section 7 repliers to some objections that can be raised against one of the argument's main consequences. In the conclusion, we will indicate how the results accomplished constitute a genuine improvement concerning both our understanding of skepticism and what should be expected from successful anti-skeptical strategies in general.

A reasonably intuitive objection that can be raised against this contribution is that its scope and results are too negative. It merely rejects Cohen's argument. However, we contend that Cohen's mistake is due to specific neglected elements of skeptical scenarios that cannot be ignored by any valuable assessment of skepticism, nor by any sound anti-skeptical strategy. The concluding section will make a case for how our counterargument against Cohen has

broader applications than the specifics of this disagreement. A further complaint can be levied against our decision to present the Brueckner/Cohen debate in detail. It might be protested that rehashing the workings of a 25-year old debate does not warrant the space given here to its exposition. However, we chose to grant it this much space for two reasons. Firstly, our argument relies crucially on specific insights that can only be appealed to after a perspicuous presentation of the Brueckner/Cohen debate. Without it, certain passages in our proposal would appear puzzling and questionable to the reader, and rightly so. Secondly, while the debate began in the 90s, there has been a dearth of contributions, partly due to the complexity and somewhat abstract structure of the involved arguments. We contend that this is a crucial reason why specific insights and ideas we point towards have been overlooked so far. We plea patience to the readers, confident that they will find the exposition helpful to better understand our positive contribution.

2. Closure and Underdetermination

The Closure principle for knowledge can be stated as follows

CK) For every S, p, q, if S knows that p, and S knows that p entails q, then S knows or is at least in a position to know q

This formulation is called competent-deduction closure. The requirement that S knows the relevant entailment from p to q might appear at first too demanding for a principle that is supposed to govern everyday knowledge acquisition. However, a closure principle *without it*, of the form "If S knows that p and p entails q, then S knows q", appears intuitively implausible. If the subject knows p, but has no idea whatsoever that p entails q, it seems difficult to understand how S could be in a position to know q. The competent deduction clause exemplifies the usefulness of endorsing epistemic closure. Closure is no mere logical principle; it rather explains how our knowledge expands.[1]

[1] Rejecting the competent deduction clause would entail allowing for implausible logical omniscience (Kvanvig 2008, p.467; Klein 1995, p.215). Concerning competent-deduction closure

Given that the framework in which the debate is ordinarily couched in is an evidentialist one, what is at stake is whether the evidence available to S can *justify* the belief that p. We can assume here that justification is at least necessary for knowledge; hence the closure principle for knowledge can be reformulated in terms of justification:[2]

> **CJ**) For all S, p, q, If S's available evidence [E] justifies p, and S is in a position to know that p entails q, then S's E justifies q

The above principle can also be stated in terms of incompatible propositions, which is of particular importance when dealing with skepticism:

> **CJ***) For all S, p, q, if S's E justifies p, and S knows that p and q are incompatible propositions, then S's E justifies ¬q

We are not interested in whether the principle can be repealed, as those positions endorsing a sensitivity condition on knowledge argue. What is relevant for us is the skeptical argument that exploits it. Defining H as any ordinary proposition we can have justification for and whose justification thereby entails justification for ¬SK, and SK as the skeptical scenario which by definition is incompatible with possessing justification for any H, we have:

> **Closure-based skeptical argument**
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> **1C**) If S's E justifies H, and S knows that H and SK are incompatible, then S's E justifies ¬SK [CJ*][3]
> **2C)** S's E does not justify ¬SK
> **3C)** S's E does not justify H [1C, 2C, mt]

The minor premise allows the skeptic to run the modus tollens argument instead of the corresponding modus ponens. While we'll present some support for this choice in the next section, a simple appeal to traditional skeptical scenarios should suffice for now. Dreaming,[4]

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explaining how our knowledge can expand, from what we know to what we don't know yet cf. Williamson 2000, p.117; Klein 1995, p.219.

[2] For some support in the extant literature for this assumption see Dodd 2012, p.338; Briesen 2010, p.224.

[3] David&Warfield (2008) argue against this application of the closure principle. They maintain the entailment H→¬SK as something an ordinary subject would not know. Even if this seems a dubious claim, we can accept for our purposes that skepticism is a problem mainly for epistemological perspectives.

[4] Cf. chapter one of Stroud 1984.

or the BIV possibility, both postulate at least the lack of introspective indistinguishability between cases that would be required to establish that S's E justifies H.[5]

The Underdetermination principle expresses instead the following conditional:

> **UP)** For all S, p, q, if S's E for p does not favor p over an incompatible alternative q which S knows to be incompatible with p, then S's E does not justify p[6]

The idea behind this principle is that the evidence S grounds her belief p on should have enough epistemic *merit* to grant it some degree of support against some belief q that S knows to be incompatible with p. This is perspicuously expressed in the alternative formulation of the principle given by Jonathan Vogel (2004, p.427; 2005, p.108):

> **UPA**) If q is a competitor to p, then one can know p only if one can non-arbitrarily reject q, i.e., only if it has more epistemic merit than q

The main point made here is that underdetermination expresses a requirement concerning the *quality* of the evidence grounding one's beliefs (Brueckner 1994, p.830). It is an intuitive condition on any belief we would acknowledge as justified. It is difficult to see how the resulting belief would be anything else than arbitrary, at least from an evidentialist perspective, if the principle was instead rejected. If one's belief is revealed as arbitrary based

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[5] This should not be taken to mean that introspective indistinguishability is *sufficient* for radical skepticism to ensue. However, it is difficult to see how a radical skeptical scenario can be effective without establishing at least some instance of introspective indistinguishability.

[6] The principle is expressed in terms of a favoring relation of epistemic support. This is understood as the evidential or rational relation that makes a belief p something reasonable to be believed (cf. Brueckner 1994, p.834; 2005, p.389; Briesen 2010, p.224). Alternatively, the principle can be expressed in terms of *discriminating* evidential support, and this formulation is sometimes used in debates concerning underdetermination of scientific theories and scientific realism (cf. Devitt 2002). However, we choose here to adopt the favoring expression for the following reasons. Firstly, it is how the epistemological debate around underdetermination skepticism formalizes the principle (cf. Brueckner 1994, p.830; 2005, p.388; Cohen 1998, p.144; Pritchard 2005a, p.39). Secondly, expressing underdetermination in terms of *discriminating* evidential support might make the principle more contentious, as a discriminating evidential relation is a stronger requirement than favoring support. This choice could also skew the understanding of the principle in an overtly internalist sense. The whole epistemological debate is instead neutral on questions of internalism/externalism. The only assumption of the debate is an evidentialist framework broadly conceived. I thank an anonymous reviewer of this journal for urging me to clarify this aspect.

on the rational support it enjoys, it cannot be something that the subject would be justified in believing. Trivially, it would fall short of knowledge.[7]

For now, we will focus on the principle expressed in the UP formulation. The UPA expression will play a role in our analysis later on. The UP-based skeptical argument runs as follows:

> **Underdetermination-based skeptical argument**
>
> **1U)** If S's E does not favor H over SK, then S's E does not justify H [UP, H and ¬SK are incompatible by definition]
> **2U)** S's E does not favor H over SK
> **3U)** S's E does not justify H [1U, 2U, mp]

Notice how this is the same conclusion the closure-based argument formulates (Pritchard 2005a, p.41), and in this instance, the modus ponens route is pursued. The intuitive support for running this argument over its modus tollens alternative is that the skeptic can maintain that as long as no argument is given as to how our evidence can support or justify H over ¬SK, we must remain agnostic on this score. Therefore, the only inference we can draw for now is that H enjoys no genuine evidential or rational support. Via UP, E does not justify H.

For our purposes, it is helpful to make the contrapositive form of the principle explicit:

> **UP*)** For all S, p, q, if S's E justifies p, and S knows that p and q are incompatible propositions, then S's E favors p over q

This formulation not only helps us capture the *positive* rendition of the underdetermination principle, but it also permits us to realize that UP* shares the same antecedent as CJ*. In this sense, the two principles express plausible axioms concerning the relationship between evidence and the belief it purportedly supports. In terms of H and SK:

> **P**) S's E justifies H, and H and SK are incompatible propositions [common antecedent]

[7] Pritchard defends its intuitive nature by arguing that UP is for all relevant respects equal to the *Rational Ground Principle*: to have a rationally grounded belief in p, S must lack a rational basis to believe ¬p (2015, p.49).

This becomes via CJ*

PC) S's E justifies ¬SK

And via UP*

PU) S's E favors H over SK

The corresponding skeptical arguments both deliver the same result, namely that S's E does not justify H and operate via these respective minor premises:

2C) S's E does not justify ¬SK
2U) S's E does not favor H over SK

3. The Argument for Underdetermination's Pre-eminence

The above should provide a reasonably comprehensive presentation of the principles and associated skeptical arguments. We can intuitively notice that in the non-skeptical and skeptical use of these principles, CJ* appears stronger. Its anti-skeptical employment entails justification for the denial of the known incompatible proposition. At the same time, underdetermination states the relatively mundane fact that if any p is indeed justified, then we have available evidence which favors p over a known incompatible proposition. The minor premise again states something stronger in the closure-based argument. We possess no justification for the denial of the skeptical hypothesis; hence we possess no justification for ordinary propositions incompatible with it. Underdetermination instead opts for a less committal realization that ordinary empirical evidence fails to favor H over the incompatible alternative SK unless proven otherwise. This means that an argument whose target is to refute the closure-based argument might leave the underdetermination-based unscathed.

The weaker status of the underdetermination-based argument can also be appealed to in order to present it as the more defensible argument of the two. While the closure-based argument – considered *on its own* – establishes as its minor premise that our evidence does

not justify the denial of the skeptical hypothesis, the underdetermination problem argues that our ordinary evidence fails to favor ordinary propositions over it. This is a less committal, less definitive thesis. Lest the skeptic fall prey to a kind of negative dogmatism, the underdetermination argument offers the possibility for the anti-skeptic to provide some positive argument as to how our evidence is capable of favoring any H over SK.[8] In this way, skepticism allows for the possibility to provide some reasons for how we can claim to be justified in believing H. Were it otherwise, we ought to question whether we should ever engage with a position that cannot be a priori refuted. However, until such positive reasons are not provided, our beliefs are left unsupported by other ordinary reasons or evidence we would appeal to in everyday contexts. The support enjoyed by our beliefs is left as merely *insular* (Pritchard 2015, p.55) and cannot possibly suffice to make a case against skepticism and for the justification of any relevant H.

In turn, recognizing that the underdetermination problem suggests agnosticism concerning the quality of the evidential support enjoyed by our beliefs can support the statement that, given how things stand for now, our evidence fails to justify the denial of SK. This is the minor premise of the closure-based argument. It doesn't entail our evidence *cannot* do that in principle, only that no adequate reason has been established so far that warrants that our evidence justifies ¬SK. The skeptical argument can work perfectly well even if the minor premise has a promissory rather than definitive status. This is one of the intuitive reasons why underdetermination has been conceived to provide crucial support for the minor-premise of the closure-based argument. The rationale expressed by the underdetermination

[8] The underdetermination-based argument simply shows that as long as we don't have any supporting reason of the required quality, we can't rationally claim justification of any H. However, this doesn't restrict the kind of moves that the skeptic can make if such reasons are then proposed. A possible skeptical route draws from the conceptual arsenal of Agrippan skepticism, to counter every attempt by the epistemologist to tilt the evidential support in favor of H. That the underdetermination argument embodies an essentially Pyrrhonian strategy has been noticed in the literature (Yalcin 1992, p.14; Pritchard 2005a, p.39; Walker 2015, p.220; Axtell 2008, p.559), but this insight has not been developed so far.

principle captures two crucial insights. First, to refute skepticism and claim justification for ¬SK, some positive reason needs to be adduced so that the modus ponens route of the closure-based deduction can be legitimately selected over the modus tollens.[9] However, as long as the evidence we ground our beliefs on lacks this warrant which would allow the belief to possess positive support over and against SK, then it cannot be assumed that that evidence justifies the denial of SK.[10] This gives us a prima facie reason to run the closure-based entailment with the skeptical modus tollens.

This reasoning should attest to the intuitive idea of how the stronger, closure-based argument is at least dependent to some degree for its minor premise upon the underdetermination principle and corresponding argument.[11] Anthony Brueckner (1994) has provided two arguments to show not only that closure-based skepticism requires an appeal to underdetermination but that skepticism only requires underdetermination to bring home its point and that the two principles express the same insight at least vis-à-vis the skeptical problem. Thus, the general idea would not just be that closure-based skepticism is parasitic on underdetermination but also that the closure argument is ultimately superfluous. The skeptical point is already made once our lack of justification for the denial of SK is reached.[12]

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[9] It is pointless to reply that the skeptic too needs to adduce independent reasons for pursuing the modus tollens. The one advancing the justificatory claim is the non-skeptic. The skeptic can heartily accept that her position is parasitic on the claims made by the non-skeptic. If no claims to justification are advanced why should the skeptic ever enter the picture? If the underdetermination principle is accepted, and it seems an option the anti-skeptic should select if she wants to avoid a much simpler skeptical charge – arbitrariness –, all the skeptic does is turning it against the anti-skeptic.

[10] For some support in the literature for underdetermination expressing these insights see Boult 2013, p.1128; Huemer 2000, p.407; Yalcin 1992, p.8; Brueckner 1994, p.830.

[11] An available alternative is to argue that the minor premise of the CJ*-based argument exploits the so-called *Ignorance Argument*, which establishes the conditional 'If S's E does not justify ¬SK then, S's E does not justify H" (DeRose 1995, p.1). However, this seems little more than the contrapositive of CJ*. As Mikael Janvid argues (2006, p.67), considerations of ignorance draw their strength from and are in all respects equal to underdetermination.

[12] For the claim that closure is parasitic on underdetermination see Greco 2018, p.57. The second claim resembles Peter Klein's idea that the CJ*-argument is *virtually question begging* (1995, 2004), i.e. that the conclusion of the skeptical argument is accomplished via a sub-argument for one of its premises (in this case underdetermination).

The first argument is quite simple. It merely constitutes the recognition that the skeptical argument formalized here as 1U-3U in the previous section does not require an appeal to CJ*. The argument, Brueckner contends, shows that S does not know H without any antecedent appeal to lack of knowledge of or justification for ¬SK (1994, p.833). What is required is mere lack of favoring support for H over SK. Given that the ultimate conclusion of the skeptical argument is that we lack knowledge of any ordinary proposition H, this attests to the pre-eminence of the underdetermination formulation, in the sense that closure is not necessary for skepticism to make its case.

The second argument concerns the purported logical equivalence of the two principles, at least with regard to skeptical hypotheses. This argument is infamously contentious. It didn't help that Brueckner only gave it in a footnote (ibid, p.832), possibly because he took it to establish a platitude stemming from considerations about underdetermination and the quality of evidence that grounds our beliefs. Nevertheless, it is necessary here to present the argument in a detailed manner, given that the objections to Brueckner pivot on this argument's intuitive failure, not only concerning the purported equivalence of the principles but targeting the fundamentality of the underdetermination argument as well.

Brueckner's argument begins with the principles formalized here as UP* and CJ*. This makes it explicit that the two principles share their antecedent, namely that S's E justifies p, and S knows p and q to be incompatible. It is then shown how CJ* entails UP* and vice-versa, establishing logical equivalence.

The first direction of the equivalence is traditionally considered the sound part of the argument:

CJ*→UP*
I) Assume CJ* and the antecedent of both CJ* and UP*
II) S's E justifies p [assumption I], and it justifies ¬q [1, mp]

III) Assume that the consequent of UP* is false, i.e., S's E does not favor p over ¬q. This would mean that S's E does not justify p [CJ*, mt], but this contradicts step II [reductio]

IV) The consequent of UP* is true. UP* is true as well, and the conditional is demonstrated

The second direction is less perspicuous:

UP*→CJ*

I*) Assume UP* and the antecedent of both UP* and CJ*

II*) S's E favors p over q [I*, mp]

III*) Having assumed the common antecedent of both UP* and CJ*, we know S's E justifies p

IV*) Given that p and q are incompatible, and we have assumed p as justified based on E, S's E justifies ¬q, which is the consequent of CJ*

It should be apparent where the problem lies. Given that II* cannot establish by itself that S's E justifies ¬q, Brueckner appeals to the assumption that p is justified based on E. However, to obtain the consequent of CJ*, one needs CJ* itself. Otherwise, the entailment EJp→EJ¬q won't be available to be run. The idea that evidence can favor p over q without entailing justification for ¬q is precisely Stewart Cohen's lever against underdetermination, to which we now turn.

4. Cohen's Arguments Against Underdetermination

Cohen's strategy is to argue against the equivalence claim and against the idea that underdetermination is the fundamental skeptical problem. This would mean that a different motivation for the minor premise of the closure argument is needed, and of course, it cannot be assumed that the only way to motivate it is to appeal to UP*.[13] Nevertheless, if Cohen's argument succeeds, this would provide support against this relatively widespread intuition.

[13] In the contemporary debate, the main alternative source of skeptical motivation is sketched along Nozick's sensitivity requirement. This is because sensitivity shows how we'd still believe ¬SK even if SK were true. However, appeals to sensitivity have been contested on the grounds of their entailing rejection of CJ*, making the question of what motivates CJ*-skepticism moot (Brueckner 1994, p.830; Boult 2013, p.1127). Cohen's own motivation (1998, pp.146-7) expands upon the Nozickian idea, supplementing it with an appeal to explanatory simplicity. For criticisms of this strategy see Briesen 2010, p.231; Dodd 2012, p.348; Boult 2013, p.1130. It must also be noticed how an appeal to a condition on *knowledge* is difficult to square with motivating the minor premise

The argument itself is structured in three steps. Firstly, Cohen establishes that UP* might be false while CJ* is nevertheless true, while the inverse is not the case, casting doubt on the pre-eminence of UP*. Then Cohen states the point we ended the previous section with: CJ* cannot be established by UP*. Finally, Cohen shows that every refutation of the CJ*-based skeptical argument will entail the refutation of the UP*-based argument. Taken together, these three results amount to the rejection of both Brueckner's theses.

Let us start with the first argument. Cohen (1998, p.148) focuses explicitly not on general incompatible propositions but on propositions employed in skeptical arguments, H and SK. The general assumption Cohen makes is that E does not justify ¬H. This is because, given that H is a placeholder for any ordinary proposition we would normally consider justified and is incompatible with SK (and entails ¬SK), if E justified ¬H then we would have no justification for any ordinary proposition from the start.[14] Cohen's focus is in particular on the minor premises of the arguments, 2C [S's E does not justify ¬SK] and 2U [S's E does not favor H over SK]. Cohen understands each respective skeptical argument as proceeding via 2C and 2U. Crucially, he argues that 2U can be false while 2C can be true, and 2U cannot be true without 2C being true.

2U can be false when 2C is true

1) Assume the truth of 2C and the falsity of 2U, i.e., E favors H over SK
2) These assumptions do not entail that E can justify either H or ¬SK. It is possible for example that Pr(H/E)=0.5 and Pr(SK/E)=0.4
3) If this is consistent, then 2U can be false while 2C is true because notwithstanding favoring evidential support for H, we don't necessarily have justification for ¬SK.

2U cannot be true if 2C isn't true

of a skeptical argument about *justified* belief. Thanks to an anonymous reviewer for suggesting this further issue with this idea.

[14] "(UP) and (CJ) will have skeptical significance only for those cases where S's evidence does not justify not-[H]. For if S's evidence does justify not-[H], it is uncontroversially true, independently of either (UP) or (CJ) that S fails to know [H]" (Cohen 1998, p.149).

1) Assume for reductio the denial of 2C, i.e., E justifies ¬SK
2) If E justifies ¬SK, H will be favored over SK[15] because we have justification for its denial. But S's E favoring H over SK is simply the denial of 2U
3) If 2C is denied, how could 2U not be denied? This could only be possible if E were still incapable of favoring H over SK.
4) But if E justifies ¬SK *and* E is still incapable of favoring H over SK, then this is only possible if E justifies ¬H as well (Cohen 1998, p.149). However, this directly contradicts Cohen's reasonable assumption that E does not justify ¬H. This contradiction expresses the fact that it is implausible that E can justify both the denial of the skeptical hypothesis *and* the denial of any ordinary proposition relevant to or entailing ¬SK.
5) Therefore, it is not possible for 2U to be true if 2C is false.

Notice two crucial aspects of Cohen's argument, which we'll exploit in our counterargument. The first horn of the above reasoning appeals to the possibility of favoring evidential support, which falls short of a justificatory basis. The second horn must appeal to the character of the skeptical hypothesis. This is because in non-skeptical contexts, it *is* possible for evidence to justify the denial of two mutually incompatible propositions if they are both false while not favoring either of them over the other. For example, the two propositions: "My body temperature is 45° C" and "My body temperature is 50° C" are incompatible because if a body temperature is 45°, it cannot be 50° at the same time, but they are both false because if either one was true, I'd be dead, and I couldn't assert either. Thus, my evidence favors neither over the other and justifies their denial. This is a clear case where 2U is true, but 2C is not, against Cohen's contention. However, if we place the argument in a skeptical context, evidence cannot justify the denial of every ordinary proposition H is a placeholder for[16] while

[15] "Now suppose E does justify not-SK (the denial of [2C]). Then E must favor [H] over SK (the denial of [2U])." (Cohen 1998, p.149). In page 5 here we defined H as "any ordinary proposition we can have justification for and thereby entails justification for ¬SK" and we defined SK as incompatible with having justification for any H. H must be relevant to the skeptical scenario, in the sense that we would ordinarily have justification for it. Otherwise, if we choose an H which would not be ordinarily justified, Cohen's argument will plainly fail. If my evidence justifies not-SK it does not, arguably, favor H over SK if H is "the moon is made of cheese". I thank an anonymous reviewer for pressing me to clarify this aspect of Cohen's argument, as it could otherwise lead to confusion.

[16] To reiterate: H is a placeholder for any proposition that we'd take to be ordinarily justified and which is relevant to (i.e. incompatible with) SK, thereby and entailing ¬SK. It is true that my evidence can justify the denial of SK while justifying the denial of an ordinary proposition such 'my hands are cold'. However, if my evidence justifies the denial of 'my hands are cold', this means that my evidence justifies 'my hands are not cold'. This therefore means that there is *at least some* H which *is* justified,

simultaneously justifying the skeptical hypothesis's denial. This is because H and SK not only cannot be both justified at the same time, but their negations too cannot be both justified at the same time by definition. If my evidence justified ¬SK *and* simultaneously justified ¬H, what is this evidence supposed to be evidence of?[17] If my evidence justified both H and SK, how could this be still a case of radical skepticism? However, this conclusion can only be reached within a radical skeptical setting. Only by taking into account what the skeptical problem establishes can Cohen's argument succeed. This will be a crucial point of the counter-argument we propose in the next section.

Cohen's second argument (1998, p.151) builds on the reasoning against logical equivalence we closed the previous section with. Cohen registers that assuming UP* and the antecedent of CJ* fails to deliver the consequent of CJ*, E justifies ¬q, and we can only have the consequent of UP*, E favors p over q. However, he also recognizes that the consequent of UP* not only forbids one to claim justification for ¬q, but, given the result of the first argument, one cannot even claim justification for p. After all, we just saw that evidence could favor a proposition but fail to justify it at the same time, or so Cohen contends. Brueckner had available justification for p based on E only because he assumed as part of his derivation the antecedent of CJ*, but this cannot establish that S's E justifies not-q without assuming the whole principle CJ*. Therefore, logical equivalence between the principles is hereby rejected.

in this case, 'my hands are not cold', hence E does not justify the denial of every H. Cohen does not detail the features of H in depth, but his usage of the term can be charitably intended in this way for his argument to work. We leave aside any lingering dissatisfaction with his argumentative strategy pivoting on this aspect, as the interpretation we provided seems plausible enough for his argument to work.

[17] In fact, Cohen's assumption that E did not justify ¬H was because if it did justify ¬H, then skepticism would have won from the start independently of any principle used. Therefore, if evidence justified both ¬SK and ¬H, this would mean that E would be justifying at the same time the denial of skepticism and something in all respects equivalent to skepticism.

The last argument aims at closing the deal concerning the pre-eminence of closure that Cohen defends. Given the results established thus far – that the principles are epistemically distinct and that UP* requires CJ* to be true but not the inverse – Cohen argues that every refutation of the CJ*-based argument will entail the refutation of the UP*-based argument. To bring this point home, he argues that the premises of the UP*-based argument cannot be true if the closure-based argument is undermined.

1) If S's E does not favor H over SK, then S's E does not justify H [1U]
2) S's E does not favor H over SK [2U]
3) S's E justifies H and S's E does not justify ¬SK [reductio, denial of CJ*]
4) S's E justifies H [3, simplification]
5) S's E does not justify H [1U, 2U, mp]
6) ⊥ [4,5]

We reach a contradiction if we assume the premises of the underdetermination argument but deny closure. Again, given that lack of justification does not entail a lack of favoring support from evidence, the premises of the closure-based argument do not entail the minor premise of the underdetermination-based argument. The above argument indicates that while a rejection of the closure-based argument will entail the failure of the underdetermination argument, the inverse won't happen. Closure-based skepticism can resist a refutation of the underdetermination-based argument.

5. Evidential Support and the Peculiarity of SK

Cohen has seemingly refuted both theses that Brueckner advanced. The two principles are not logically equivalent, and it seems that closure is the more fundamental problem of the two.

Our goal here is to argue against Cohen's objection and to defend the intuitive idea that CJ* is a bona fide defensible principle of epistemic deduction, which on its own should not lead us into skeptical pitfalls. Instead, the real problem seems to be the request for non-arbitrary rational or evidential grounds that UP* expresses. As long as it is left unanswered, our

reasons and evidence remain insular, and this cannot warrant justification for any H nor the consequent application of CJ* in the modus ponens direction. The thesis we present is that Cohen's arguments are cogent for ordinary contexts, where it is indeed possible for some evidence E to favor some proposition over an incompatible alternative without licensing justification for that proposition nor for the denial of the incompatible proposition. However, this cannot be so when skeptical scenarios are taken into account. Given that a crucial insight of Cohen's first argument, later exploited in the other arguments, relies on the character of skeptical scenarios,[18] Cohen must bind his whole reasoning to the character of skeptical scenarios. We will shortly see how this is the core issue.

Before, we have to individuate what makes the difference in Cohen's reasoning, and such a result can be delivered by addressing something rather odd in Cohen's third argument. The first aspect is that it is not clear why step 3, the reductio of CJ*, can prove that any refutation of the CJ*-based argument entails the refutation of UP*-based arguments. This is because step 3 is merely a rejection of CJ*, the closure principle, which does not really count as a refutation of the *skeptical argument* based on it. It would be at most a dissolution of the argument. A refutation of a skeptical argument ought to show that our evidence justifies us to believe the denial of the skeptical hypothesis, but closure-denial forbids us from claiming such justification. The denial of CJ* on its own doesn't seem capable of establishing a refutation of the underdetermination-based argument. If evidence for H does not entail the heavyweight implication ¬SK, it appears reasonable to argue that the UP*-based problem still works. Available evidence still cannot favor H over SK, and to maintain that H is justified notwithstanding this result comes at the very least with a defensible accusation of arbitrariness.

[18] The already mentioned impossibility of E justifying both ¬H and ¬SK.

All that we've managed to show via this reasoning suggests that if we deny closure, we still have a question about whether evidence can offer non-insular support to our beliefs.[19] Cohen's argument creates the illusion that one contradicts the underdetermination argument by denying closure, but this is only because he assumes for reductio that the denial of the closure entailment means *having* justification for H. However, if S has justification for H based on E, it is trivial that it will contradict the UP*-based argument. It will contradict any skeptical argument simpliciter, as radical skepticism argues that we do not, at least for the time being, possess justification for any H (Pritchard 2005a, p.45).[20]

This should at least create some suspicion about the cogency of Cohen's fundamentality claim concerning the skeptical arguments, but there is also the possibility that Cohen's proposal, to some degree, can live with this result. The other two arguments are still in place, contesting the equivalence claim and maintaining that evidence can favor H over SK while falling short of justification for H or ¬SK. The latter attests that the underdetermination problem might be solved, leaving the closure-based issue untouched.

Except that there is one additional element in Cohen's third argument that appears suspect. The argument against logical equivalence established that CJ* could not be derived from UP*, not at least without assuming CJ* first. However, Cohen's third argument assumes UP* and its antecedent and then proceeds to purportedly show that this is inconsistent with a denial of CJ*. This appears as a derivation of CJ* from UP* if there is one. The only one who recognized it in the literature is Pritchard (2005a, p.45). Via Cohen's argument, "effective logical parity between the two principles is restored."

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[19] The idea that anti-skeptical proposals relying on externalist conditions on knowledge or justification fail to address the UP*-problem can be found in Pritchard 2008, p.453.

[20] As Pritchard remarks, denial of closure can also be in place by allowing for the possibility of the co-existence of justification for H and lack of justification for ¬SK, while suspending judgment on whether any justification for H is available due to the standing issue of underdetermination.

Cohen, who otherwise does not seem to recognize this consequence of his third argument, has a possible answer at his disposal, and it is this answer what allows us to identify the real culprit we must target in Cohen's overall stance. The possible reply to Pritchard's charge of having reestablished logical parity draws from Brueckner's original argument. If we develop Cohen's third argument in the same way Brueckner formulated the equivalency argument, we see that assuming UP* and its antecedent *is* compatible with the denial of CJ*. Now, this compatibility supports both that the principles are not logically equivalent and that CJ* resists a refutation of the UP*-based argument:

1) If S's E justifies H, then S's E favors H over SK [UP* assumption]
2) S's E justifies H [UP* and CJ*'s common antecedent]
3) S's E justifies H and S's E does not justify ¬SK [denial of CJ*, reductio]
4) S's E does not justify ¬SK [3, simplification]
5) S's E favors H over SK [1, 2, mp]

No contradiction is in sight among what can be legitimately inferred here, and this result confirms the main points of Cohen's first and second arguments. Entailing the consequent of CJ* [S's E justifies ¬SK] from UP* is forbidden if we cannot appeal to CJ*, so the principles are not logically equivalent. Lines 4 and 5 are nothing else than the first half of Cohen's first argument, namely that S's E can favor H over SK while at the same time S's E does not justify ¬SK.[21]

This answer available to Cohen allows us to place our main target in the crosswire. Most if not all of Cohen's reasoning hinges on the idea that evidence can favor any p over an incompatible q while forbidding justification for either p or the denial of q. The question now

[21] So line 4 is the term defined as 2C, and line 5 is the denial of 2U. Cohen's argument started precisely by proving that 2U could be false while 2C is true. It is true that from the denial of 2U itself we shouldn't be able to confer justification on H either, but here justification for H is assumed and closure denied for reductio.

is, is this contention really applicable to skeptical scenarios? We argue in what follows that it is not.[22]

Indeed, this will seem an absurd claim at first because, in ordinary non-skeptical contexts, Cohen's contention seems unassailable: if I were to roll a six-sided die which lands out of sight before I can look at it, I have evidence which favors the proposition "the die did not land on 1" because the probability of this happening is five out of six. However, this does not justify me to believe "the die did not land on 1". How can this not apply to skeptical scenarios?

To defend this idea, our strategy is to compare a case of underdetermination of scientific theories by data with the skeptical case of underdetermination to show how what can be considered genuine evidential support differs in the two cases. The reason for selecting a case of underdetermination of theories by data as a comparison to skeptical underdetermination should appear rather mundane. The debate around evidential underdetermination has its origin in the question concerning the support enjoyed by scientific theories. Additionally, choosing a context of scientific theories allows the analysis to avoid straddling across a too vast theoretical gulf that would weaken the forcefulness of any conclusion we may draw.

A case of clear evidential underdetermination can be found in recent scientific theorizing concerning Dark Matter. In the 70s, Vera Rubin's observations concerning the orbital speed

[22] We do not take a stance on the nature of evidence here, as this would trivially fall out of the concerns of this paper. Most importantly, the debate itself does not take a stance on it. Both Brueckner and Cohen seems to endorse an internalist conception of evidence, possibly because in the 90s evidentialism was understood by most as being a variety of internalism (see on this Pritchard 2005b, pp.114-5). We contend that everything we say here applies to both internalist and externalist conception of evidence. Abiding by the UPA formulation of underdetermination, the issue concerns the epistemic merit of our beliefs and associated evidence, and this is something both internalist and externalist conceptions of evidence should address. This is also compatible with endorsing a specific conception of evidence as capable of providing a refutation of skepticism. For example, factive evidence is used as having anti-skeptical purport in contemporary varieties of disjunctivism. Here we are concerned with understanding what *motivates* the skeptical argument as something in need of refutation, and not with potential refutations provided by particular epistemological stances.

of stars in the outer arms of galaxies attested that they did not match the expected values predicted by Kepler's third law. This led to the suggestion that there is unaccounted mass in those regions of space, thereby explaining these results. This unaccounted mass is what is now called Dark Matter, which does not interact with other particles via either the electroweak or the strong nuclear force, but only via gravity. Several cosmological phenomena registered in the past decades seem to support its existence, such as gravitational lensing and the observation of the so-called 'bullet cluster,' where two clusters of galaxies colliding with each other have produced gravitational lensing in areas where no ordinary matter is to be observed. However, the Dark Matter Hypothesis [DMH] isn't the only explanation of these phenomena available. Its principal competitor is a family of theories called Modified Newtonian Dynamics [MOND], which postulate that there is no excess mass unaccounted for. They uphold the possibility that in certain regions of space where gravitational acceleration is low enough, violations of Newton's law of universal gravitation occur. In its most advanced form, Tensor-Vector-Scalar Gravity, it accounts for all the evidence which originally supported DMH.[23]

This is a clear case of evidential underdetermination by data. While current scientific consensus selects DMH over MOND, this can be due to DMH's naturalness compared to MOND. It is more parsimonious to hold on to the repeatedly confirmed tenet that physical laws are invariant and postulate additional mass to solve the detected discrepancies rather than arguing for universal laws undergoing tiny modifications under specific parameters. However, DMH itself is not conceptually pristine. It seems like an ad hoc solution to label as misleading what would otherwise be evidence against Newtonian dynamics. Recent failures

[23] We don't hereby intend defending MONDs over DMH. We agree with the scientific consensus finding MOND less plausible than DMH. What interests us here is that their status can be understood as one where favoring support is available from evidence which however falls short of justification for either theory and for denying the alternative. The Bullet Cluster evidence was initially conceived to be a 'slam dunk' against MOND and in favor of DMH, but this is far from a settled debate, see Lee & Komatsu 2010 and Angus & McGaugh 2008.

by colliders to find any trace of the most promising candidate for DMH, supersymmetric particles, have also cast some doubts upon the cogency of DMH. Additionally, recent observations concerning the formation and behavior of dwarf galaxies seem more in line with MOND than with DMH (Kroupa et al., 2012).

However, breakthrough observations of gravitational waves by the LIGO observatory have provided evidence that directly contradicts a central tenet of MOND. The observations are consistent with a predicted speed of gravity equal to that of light. MONDs ordinarily predicted a lower speed of gravity.[24] We can sum up the evidential situation with the following table:

Supporting Evidence for DMH	**Supporting Evidence for MOND**
Galaxy Rotation Curves	Galaxy Rotation Curves
Gravitational Lensing	Gravitational Lensing
Bullet Cluster	Bullet Cluster
Speed of Gravity	Dwarf Galaxies

Observe how this case of evidential support agrees with Cohen's contention that DMH can be favored by evidence while lacking the necessary support to claim justification for DMH and the denial of MOND. This is because while LIGO's observations are clear evidence in favor of DMH, nothing in principle forbids formulating a MOND theory which agrees with DMH on this particular item of supporting evidence. Notice this additional peculiarity of the listed evidential items: even if overall evidence favors DMH over MOND, many items of evidence grant genuine evidential support to both. Gravitational lensing is an empirical phenomenon that is explained by and supports both theories. The fact that it cannot on its

[24] This result has been read as *falsifying* MOND (Boran et al. 2018).

own adjudicate or favor one over the other doesn't neutralize its observation being valid evidence in *favor* of both.

However, what happens when we carry out the same analysis in the case of skepticism? What could be pieces of genuine evidence for either ¬SK or SK in the sense described above? We can draw something like the following table:

Evidence for ¬SK	**Evidence for SK**
Factive experience of external objects	Illusory experience of external objects
State of Wakefulness	State of Dreaming
Reliability of the Senses	Flawed Human Cognition

This list is not meant to be all-encompassing regarding skeptical possibilities, but it should suffice for our purposes here. Before analyzing what this comparison entails, we must answer a very reasonable puzzlement that might strike the reader. What is the purpose of enumerating evidence *in support* of the skeptical hypothesis? Isn't the issue whether any evidence at all can be marshaled in favor of its denial? Indeed, it is. However, we are here adhering to Cohen's reasoning to show where it goes astray. His crucial contention is that H and SK can possess different degrees of evidential support, making H favored over SK while forbidding justification for either. This is why we are partaking in what could seem a rather pointless or bizarre exercise.

On to our actual argument. Notice immediately one critical element. No item is shared between the two lists. This was not the case in the comparison between DMH and MOND. Why is it so? Well, what could be a piece of supporting evidence that supports both ¬SK and SK? One could intuitively reply 'phenomenal experience', which could be in principle accounted for by both. One of the intuitive insights of the skeptical problem is precisely that

phenomenal experience could be the same even if SK were true. However, in what sense would this be *supporting evidence for either*? It seems that precisely because both account for it, it fails to provide genuine support to either. The same holds if we adopt an externalist stance on what constitutes a piece of evidence. A skeptical scenario could make it so that our faculties function as well as actually reliable faculties even if they are not ultimately reliable; such a case is expressed for example in the *New Evil Demon* problem. But if this is so, how can the presumed reliability of my senses support either of the two possibilities? For it to provide actual epistemic support this evidence would have to be qualified in such a way that it couldn't be constituting supporting evidence for both at the same time. For example, disjunctivist theories of perceptual justification require perceptual evidence to be *factive*, and that works as genuine evidence for the good case but trivially not for the bad case. This asymmetry is not what happened in the scientific underdetermination comparison. Why this difference?

The difference is due to the shared evidence between DMH and MOND being empirical observations – galaxy rotation curves and gravitational lensing[25] –, which can in principle provide support for both the claim that there are non-interactive missing particles and the claim that gravity behaves differently at low-enough accelerations. These observations function as valid evidence for both theories without further ado. One can point to gravitational lensing as providing support for both DMH and MOND – when both theories are still on the table –, even if it cannot help us decide on its own which of the two is the ultimately correct one. Instead, if left unqualified, mere indistinguishable phenomenal experience does not support either ¬SK or SK. By being unqualified it does not possess any epistemic merit

[25] These could be understood as external world *facts*, but using such a term here might lead the reader to misunderstand an implicit adoption of an externalist, factive account of evidence concerning scientific theories, while instead we are striving to remain neutral on the nature of evidence. I thank an anonymous reviewer for signaling how talking of *facts* here might lead to confusions.

capable of supporting or favoring either alternative on its own.[26] One cannot point towards mere phenomenal experience or mere semblance of reliability as giving support to ¬SK or SK. Instead, this purported evidence must be qualified as either factive or illusory experience for it to provide epistemic support, constituting the first row of our ¬SK/SK table.

The same holds with regard to the reliability of our senses. To provide effective epistemic support to ¬SK there must be some guarantee that our senses are reliable. Conversely, to support SK, there should be some guarantee that our cognitive systems are flawed. Mere presumed, unqualified reliability would not provide effective epistemic support to ¬SK, nor to SK.[27] It would be neutral in terms of evidential support in a way observation of gravitational lensing is not. It is true that gravitational lensing does not *discriminate* between DMH and MOND, but it *does* offer a reason for them being viable theories supported by observations. It provides support for both as theories to investigate or corroborate further. Given that the favoring relation is an evidential or rational relation which supports belief in p as something reasonable (Brueckner 2005, p.389), it makes sense to talk about gravitational lensing as offering favoring evidential support for both DMH and MOND. It makes them the reasonable theories to pursue. However, mere phenomenal experience, or mere semblance of reliability left unqualified fall short of making belief in ¬SK or SK as something *reasonable* on their own. Given that both SK and ¬SK account for them, their status as a something that tells in

[26] It can be argued that what really matters to skepticism is not a problem of mere subjective indistinguishability, which in order to establish a skeptical problem would require appeal to some principle such as a general impossibility of telling reality and appearance apart (see for instance Mizrahi 2016). Such stances are notoriously weak. They either are a form of *skepticism on the cheap* (Brueckner 2011, p.86) or open themselves to self-refutation. The skeptical problem of underdetermination asks us to provide a positive piece of evidence that could attest genuine epistemic support for our beliefs. This also is in agreement with Underdetermination establishing the *Pyrrhonian* point of undecidability between alternatives, not mere indistinguishability (See Sextus PH I.165, 170; Sienkiewicz 2018, p.162). Phenomenal experience is insufficient not because indistinguishable, but because it does not possess on its own the epistemic merit needed to *decide* between ¬SK and SK.

[27] We are assuming here for the sake of argument that it is theoretically possible to have evidence for SK.

favor of either SK or ¬SK is voided due to the character of skeptical scenarios. Incompatible scientific theories can share pieces of valid evidential support because neither threatens their validity as epistemic evidence; skepticism does instead threaten evidential support *in general*, and until is disproven, the epistemic merit of evidence accounted for by both SK and ¬SK is neutral. For their epistemic merit to be reinstated, these pieces of evidence should possess the required *quality* in a way that makes them incompatible with supporting *both* alternatives.

If the above is correct, there is an additional weighty consequence. If any of the listed pieces of evidence were to be confirmed as genuine supporting evidence, they wouldn't accrue to merely favoring support for the corresponding possibility. Instead, they would constitute instances of bona fide justificatory support. Why didn't this happen in the DMH/MOND case? Because, as we've already mentioned, the phenomena reported by LIGO's observations could be theoretically accounted for by an accordingly revised MOND theory. Most importantly, this could be done without this revised-MOND ceasing to be a MOND theory.[28] However, this cannot be so for the ¬SK/SK pair. If S has actual evidence that she has factive and not illusory experience, this cannot be accommodated by the skeptical scenario without it ceasing at once to be a radical skeptical scenario. If I have genuine evidence that I'm not dreaming, then that evidence cannot be accounted for by the dreaming possibility without it at the same time ceasing to be a skeptical possibility. If I have genuine evidence that my senses are reliable, then this evidence cannot be accounted for by the skeptical possibility that my senses are flawed, provided that this evidence is effectively *valid*. If S has genuine favoring evidence for any ordinary anti-skeptical proposition H in a way that tips the scale in

[28] This doesn't mean that it would be demoted to merely *misleading evidence*. Its status as evidence would still be intact. However, it would cease to count as favoring evidence for DMH *over* MOND.

favor of H over SK, this evidence automatically entails the denial of SK and justifies belief in ¬SK.

The general idea we can derive from the above reasoning is that when the peculiarity of the skeptical scenario is taken into account, possessing genuine evidence favoring any H incompatible with SK provides two possible alternatives:

> **A)** that evidence can, in principle, be accounted for by SK. Hence it is revealed as offering merely *misleading supporting evidence*,[29] not genuine supporting evidence for that H, or
>
> **B**) SK cannot account for it

If A is the case, in what sense is that evidence still favoring H over SK? It would be akin to phenomenal experience, which supports neither. In the skeptical context, its status as evidence is voided because SK could theoretically account for it. However, if B, this means we have on our hands genuine supporting evidence for a proposition known to be incompatible with SK. Given that SK cannot account for it by definition, it directly *falsifies* SK. Belief in both H and ¬SK becomes justified, not merely favored by this genuine piece of evidence.[30] It is important to notice that this holds *independently* of the details of the radical skeptical scenario. As long as the chosen or preferred scenario is indeed an instance of radical skepticism, available genuine evidence for one of the two alternatives cannot be accounted for by the other in the same way DMH and MOND theories can instead do so. In accounting for it, the chosen alternative would essentially lose its skeptical or anti-skeptical character.

Ultimately this means that within the skeptical context, evidence cannot support ¬SK over SK without this evidence simultaneously entailing justified belief in ¬SK. Cohen's contention,

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[29] If one endorses the idea that evidence cannot be false, then this simply means that it wasn't evidence of anything epistemically relevant to begin with.

[30] If the reader is at this point wondering whether for this connection between H and ¬SK an appeal to CJ* is still required, the next section about logical equivalence should answer their worries.

which motivated his first argument, collapses when the peculiarity of the skeptical problem is dutifully taken into account. Most importantly, the second horn of his first argument *explicitly* relies on the peculiarity of skeptical scenarios, as established in section 4. Therefore, Cohen cannot defend his point by disentangling his usage of evidence from narrow skeptical concerns. It would make the other part of his argument collapse.

The mistake made by Cohen was to assume that something can function as evidence in skeptical contexts in the same way it functions in ordinary or scientific ones.[31] While in the latter overall available evidence can grant differing degrees of support to incompatible alternatives without warranting justification to either, the peculiarity of radical skepticism does not allow this possibility to be carried over to skeptical contexts. Radical skepticism targets the basic, rational evidential sources that ground our beliefs. It raises the issue that, as long as we do not deliver positive reasons to the contrary, ordinary evidential sources do not provide us the information we need to believe, for example, Pr(H/E)=0.7 and Pr(SK/E)=0.3. The very idea that we can engage with skepticism in this way is implausible. If we take ordinary background evidence as possessing genuine epistemic merit, the probability that I'm currently dreaming is quite low, if not outright minuscule. However, this probability distribution is conditional on ordinary background evidence being assumed as already valid. To take it as valid unproblematically would spectacularly beg the question against the problem posed by underdetermination which targets the *epistemic merit* of such evidence. Non-arbitrary acceptance of its merit is necessary for justification (Vogel 2004, p.432).[32] It is reasonable to suggest therefore that the only legitimate probability distributions

[31] This could suggest that in skeptical context, evidence ought to be factive for it to be relevant. Cohen by not specifying in his argument what can count as actual evidence vis-à-vis skepticism is blind to the crucial weakness of his argument. We thank Mona Simion for this suggestion.

[32] This hasn't deterred some recent attempts in this direction, see Kung 2011 and Huemer 2016.

of propositions over evidence in skeptical contexts are [(H/E)=1, (SK/E)=0], [(H/E)=0, (SK/E)=1], or [(H/E)=(SK/E)=0.5].[33]

To reiterate, this will hold regardless of the details of the skeptical scenario, as long as it is an instance of radical skepticism. We have made the case here that underdetermination is the fundamental skeptical source because of the way it undermines the epistemic merit and validity of our belief and associated evidence. If the way it did so was dependent on the specific details of the skeptical scenario, then underdetermination would not in fact be the fundamental skeptical source. Trivially, if the underdetermination-based peculiarity of skeptical scenarios didn't hold throughout all instances of radical skepticism, underdetermination would hardly be the fundamental source of radical skepticism. Our argument here showed that Cohen's objection against the fundamentality of underdetermination fails and, unless a different objection to Brueckner's analysis is presented, the idea that radical skepticism is at bottom a problem of evidential or rational underdetermination remains cogent. One suggestion that can be drawn from this is that if in a specific scenario evidence can be handled in a different manner than showed here, it is legitimate to question whether that scenario really is a case of radical skepticism. We will further defend this in section 7. Before, we have to solve the still open question of the equivalence of the two principles that Brueckner defended and Cohen contested.

6. Principle Equivalence

Let us take stock of the results established in the previous section. We saw that Cohen's third argument is suspicious. His contention that denying the closure-based argument implies denying the UP*-based argument relies on the denial of the closure *principle* and the negation of a premise of the UP*-based argument. It is unclear what conclusion should be drawn from this. Most importantly, however, Cohen's first argument

[33] The last distribution neatly amounting to Pyrrhonian equipollence.

appeals to a conception of favoring evidential support that, while adequate for ordinary or scientific contexts, cannot be held valid vis-à-vis skepticism. The fact that the other half of that argument only works when applied to skeptical scenarios makes it inconsistent. In what remains of this analysis, we will briefly apply the above results to the still lingering feeling of uneasiness that strikes one when reading through Brueckner's argument for the equivalence of UP* and CJ*.

If our argument holds, having genuine support for belief with anti-skeptical consequences cannot fall short of a justificatory relation, at least vis-à-vis skepticism. However, Cohen and Pritchard's further objection to Brueckner's claim of equivalence between the principles is grounded on something very intuitive. UP* expresses a weaker epistemic claim than CJ*. This is clearly detected when we focus on the minor premises of the two skeptical arguments, 2U and 2C. The former states that we have no favoring support for H over SK, while 2C expresses something stronger, that one is *not justified* in believing the denial of SK. Coupled with the fact that if S's E justifies H, the entailment to ¬SK requires endorsing deductive closure, the outcome is that the two principles must be distinct. To argue otherwise seems to commit the evident fallacy of conflating absence of evidence with evidence of absence (Wang 2014, p.1133).

Can the peculiarity of the skeptical scenario save the day for Brueckner's claim? We contend that it can and that this is the insight that motivated Brueckner's original argument for equivalence, even though he did not bother explicating it as he should have to clear away possible misunderstandings. A first reply to the above accusation stems from the recognition that, concerning skeptical scenarios, the two expressions 2U and 2C might not differ as much as presumed. They *appear* to differ because 2C seems to issue the more definitive statement: E does not justify ¬SK full stop, while 2U issues the temporary assertion that total evidence E at the moment does not favor H over SK. But nothing forbids us from

intending 2C to have a provisional status as well. Given that E does not favor H over SK, we can only register that E thus far does not justify the denial of SK because it lacks the required *merit*. This might change. If the charge of insularity of reasons could be proven wrong, then we'd have evidence that favors H over SK, and given the peculiarity of skeptical scenarios, we'd be licensed to claim that E justifies ¬SK. Notice how this is also a formulation the skeptic ought to approve of, as it would avoid an implicit endorsement of a negative dogmatic thesis concerning the *impossibility* of any E ever to justify ¬SK.

However, the crucial aspect of the criticism against Brueckner was that to derive CJ* from UP*, an endorsement of CJ* is required. This is what stifles the equivalence argument. It also blocks the ultimately circular reply from the skeptical stands that appeals to the logical equivalence between CJ* and UP* to justify the endorsement of CJ* in the entailment from 2U to 2C. Something like "of course the entailment endorses CJ*, after all UP* and CJ* are equivalent!".

How can the entailment be made less suspicious and saved from this accusation? The idea is that if we consider what we said in the previous section about the specificity of evidential relationships in skeptical scenarios, then it might not be so certain that the entailment from 2U to 2C is as suspect as portrayed.

Remember Pritchard's insight concerning the trouble with Cohen's third argument. Not only it seemingly reestablished principle equivalence, but it was construed so that it would *trivially* imply the negation of SK, hence trivially implying the refutation of the UP*-based argument. Trivially is the keyword here. Once one has justification for any anti-skeptically relevant H, this implies on its own justification for ¬SK.[34] In objecting to Brueckner, it has been assumed that the mere implicit assumption of the logical deductive operator commits one to the

[34] For a similar argument based on the notion of *propositional* justification see McCain 2013, p.297.

closure principle (Wang 2014, p.1135). However, we mentioned in section 2 that closure should not be understood as a merely logical principle as it would become implausible. It rather expresses a principle of *epistemic* deduction to *expand* our knowledge or stock of justified beliefs, not a merely logical relation. Crucially, the entailment H→¬SK, at least in a radical skeptical context, does not represent a case of deduction expanding our knowledge or stock of justified beliefs. It is a trivial consequence that if I know or I'm justified to believe that here is a real hand, then I know or I'm justified in believing that I'm not in a virtual or dreaming world. Take the example of seeing a red table. If I genuinely see a red table and I can therefore be said to know that 'here is a red table', it is a trivial entailment to say that I know that 'here is not a white but redly illuminated table'. If this is not so, for example because I do not master the concept of 'color', then it is questionable to what extent I can be said to know that 'here is a red table'. The point is that this entailment has hardly expanded my knowledge or stock of justified beliefs; it is just a logical consequence of understanding what knowing that 'here is a red table' or 'here is a hand' mean. Antecedent and consequent of the entailment stand and fall together.

The result is that entailments such as H→¬SK are instances of *a priori knowable inferences*[35] based on understanding the meaning of what is known.[36] There is no required implicit endorsement of the more substantial epistemic principle of deductive closure. There is no epistemic deduction involved, only the mere endorsement of a trivial logical entailment based on understanding what the relevant H means. We contend that this triviality of the entailment is what ultimately upheld Brueckner's argument. Therefore, at least concerning skeptical matters, the two epistemic principles appear to be reducible to a single one. Given

[35] For this notion see McBride 2017, p.57; Klein 2004, p.178.

[36] A possible objection would be that this excludes animal or infant knowledge, but it can be reasonable to view skepticism as a problem for epistemological theories and minimally epistemologically sophisticated subject. Otherwise, the intuitive reasons behind the endorsement of both closure and underdetermination might lapse as well.

the broader character of the UP*-based problem, there is reason to endorse it as the primary skeptical formulation.

A possible objection is that if H→¬SK is merely a logical entailment, how can it be used to derive the substantial, skeptical hence epistemic, CJ*-based argument? There are two possible answers here: while the entailment itself is logical, the skeptical modus tollens based on it does tell us something weighty on the epistemic level, namely that we *lack* justification/knowledge of ordinary propositions. However, the skeptic, as we are presenting her here, can also bite quite happily the bullet by replying: "you're right; the closure argument is not a genuine skeptical argument. After all, its minor premise already establishes that we do not know the denial of SK, and that skeptical conclusion is motivated by UP*".

7. Equipollence

In this section, we briefly address some possible objections to one of the consequences of the analysis given in section 5: if we're forbidden from having justification in either H or SK, then the support enjoyed by incompatible skeptical and anti-skeptical propositions is equipollent.

This might seem puzzling at first, and a general line of objection could go like this.[37] While it is intuitive that in radical skeptical scenarios evidence might be neutral, why couldn't it be that some instances of radical scenarios nevertheless display a non-equipollent evidential probability? For example, imagine Sarah is a worker in a BIV factory where hundreds of BIVs are housed. She overhears that management has been kidnapping random workers to envat them and that the envatted workers have no recollections of being abducted and continue to experience the same life as before while being in the VAT. This appears to be a classic case of radical skeptical scenario; can Sarah have justification to believe she hasn't

[37] For the two expressions of this line of objection we thank an anonymous reviewer of this journal and Christoph Kelp.

been abducted? It doesn't seem likely. However, this might be compatible with her evidential situation being Pr(¬SK/E)=0.7 and Pr(SK/E)=0.3, against our contention here.

The problem with this objection is as follows. We saw in the UPA formulation of underdetermination that the problem it raises is one concerning the merit and validity of our beliefs and their associated evidence. This means that the question instituted by radical skepticism concerns precisely the possibility of establishing in a non-arbitrary manner that the evidence at our disposal possesses a certain specific validity, or quality. To say that Sarah's evidential distribution is 0.7/0.3 is to assert that her available evidence is non-neutral,[38] it possesses a specific quality or validity even if it arguably does not suffice for justified belief. The problem is that it is not clear how evidence could possess such values for someone in Sarah's situation. The experiences she has can be entirely accounted for by her being envatted, and from her standpoint phenomenal experience would be neutral. She cannot rely on memory. Maybe she has available some background information or knowledge that makes the evidential probability of her being envatted 30%. The problem with this strategy however, is something we already replied to at the end of section 5. The validity of this background information cannot be assumed independently from the underdetermination principle. Simple appeal to background conditions does not dispense us from addressing underdetermination. Doing so would mean by-passing or begging the question against the principle, and it would be arbitrary to simply assume the validity of this evidential distribution. What if she finds a document saying that workers have a 30% chance of being abducted by management? Well, what could establish the validity of that piece of evidence? If she's already been envatted, that document could be false and she could have no non-neutral way of assessing its validity. She would have no reason to consider it a valid piece of evidence. Without something that attests to its epistemic validity, that piece of

[38] With a 0.5/0.5 probability distribution, evidence is neutral and has no meaningful epistemic quality or validity.

evidence is still neutral, and the contention that her evidential situation is 70/30 has no non-arbitrary support.

Perhaps it could be replied that from an all-things-considered, sideways-on viewpoint, it can be said that that document Sarah found is correct, and the status of her evidence is after all really 70/30. Appeals to this kind of guarantee for anti-skeptical purposes are notoriously unsatisfactory. If things really are this way, then it is not clear how this could be still understood to be a skeptical scenario over a simple case of fallible knowledge or justification. The mere presence of BIVs in it does not make necessarily the situation a skeptical scenario. Imagine Sarah wore on a super-realistic VR set with experiences precisely matching those she'd be having in the real world not only concerning visual experiences, but also concerning her bodily movements and so forth, and remembered throughout this that she put on the set. This would hardly be a skeptical scenario. To instantiate a skeptical scenario, the validity of evidence *in general* must come under threat. A mere moderate possibility of being wrong is not enough, for *radical skepticism* at least.

However, perhaps we can introduce this kind of ultima facie guarantee on evidential probability while still retaining the setting of a radical skeptical scenario. Imagine God appears to you and tells you that you are not in a skeptical scenario. God orders you to draw a ball from a lot of 100 balls. Ninety-nine of these balls will leave everything as it is now. One will land you in a radical skeptical scenario. After you've drawn a ball, it seems that you have evidence supporting $\neg$SK that is equal to 0.99 and evidence for SK equal to 0.01, but this evidence does not allow you to be justified in believing $\neg$SK. This directly contradicts what we said about the peculiarity of skeptical scenarios and agrees with Cohen's original contention.

A remark on this example is immediately available. It is difficult to see how an evidential probability of 0.99 would not justify belief. However, this is only a superficial issue. The

example could be presented with a non-neutral evidential distribution that nevertheless does not meet an acceptable threshold for justification. The problem with this objection is rather that it conflates two time-slices which should be kept rigorously apart. At t_1, God is present to you, and you know by definition that you are justified in believing $\neg$SK. At t_2, you've drawn the ball from the lot, and you remember what God told you. We must assume God isn't present at t_2; otherwise, this would defeat the possibility of SK being true and it would simply justify $\neg$SK. The issue is that at t_2, we are left with the question of what validates the evidence, your memory of what happened at t_1, that warrants you that those evidential probabilities governed the lottery. If we are to abide again to the underdetermination principle, what can do the validating work at t_2 concerning the epistemic quality of your memory concerning t_1? Appeal to what God told you comes under doubt itself at t_2 because for all you know now, *you could have drawn the skeptical ball*, so it cannot function as the reason to hold that Pr($\neg$SK/E)=0.99. It seems that the evidence for SK and $\neg$SK are again equal because there are no valid reasons available at t_2 vis-à-vis underdetermination to uphold a different probability distribution, even if you still possess the memory of God telling you the odds at t_1. If at t_2 the possibility of a radical skeptical scenario is established, to have a justified belief in the memory of God telling you the 99/1 odds one must contend again with the underdetermination principle, and it is difficult to see what could play the part of the non-neutral evidence capable of supporting your belief about God telling you the odds at t_1. Indeed, if there could be such evidence, then the problem would be solved. You would not be in a radical skeptical scenario anymore. You could have a justified belief in the odds being 99/1, and skepticism as we have understood it is incompatible with possessing this kind of justification. This would either mean that the skeptical problem has been *refuted*,[39] or that the problem was from the beginning not a radical skeptical problem but one of mere

[39] Given that we are interested here in explaining what the most fundamental source of radical skepticism is, postulating a possible way of refuting it is not incompatible with anything we said in our analysis.

fallibility. In either case, this would simply confirm our initial contention. If there is to be a scenario of radical skepticism to be solved, there cannot be favoring but not justifying evidence in skeptical contexts. If at t_2 the appeal to one's memory as evidence possesses the required epistemic quality and merit, then the described scenario would not be one radical skepticism. As we said right above, it is not enough for radical skepticism to be established that some device or source of massive deception be available nearby. This device of massive deception must function in a way that effectively underdetermines what would otherwise be valid epistemic evidence. It is difficult to see how your memory at t_2 understood as an evidential source could escape this predicament and the whole scenario still be called one of radical skepticism. If at t_2 the evidential distribution 99/1 is shown as valid, then at t_2 one is not in a radical skeptical scenario. Given that what we were trying to investigate here is whether it is possible to have an underdetermination-based skeptical scenario with a non-neutral evidential distribution, the conclusion we can draw is that this is after all not possible. Neutrality of evidence seems required for radical skepticism to ensue.

This idea that underdetermination expresses our ignorance of what our purported evidence can support allows a reply to a related objection against equipollence brought on by Dylan Dodd. Dodd argues that equipollence might seem intuitive because we implicitly endorse the *Principle of Insufficient Reason,* which "says that when we have no basis for preferring one hypothesis to another, we should assign them equal probability" (2012, p.345). However, the application of this principle is not always consistent. Dodd's example to this extent is borrowed from Bas van Fraassen. A machine is instructed to build a cube with a side-length chosen at random between 0 and 1 foot. When queried about the probability that L<0.5ft, we should assign this probability 0.5, and the same goes for the probability that L>0.5ft. However, when queried as to the probability that the surface area of one of its squares is $<0.5ft^2$, it seems by the principle that we should assign the probability again of

0.5. However, this is not consistent with the fact that, given that Surface=L^2, the probability 0.5 should instead be assigned to S<0.25ft^2.

However, this objection won't hold. Underdetermination-skepticism undercuts the ground to consider valid any probability distribution that is not an equipollent one because we lack the *information* required to consider valid a specific probability distribution. Our answer to the previous objections hinged precisely on this aspect. In Dodd's argument there is an illusion of inconsistent application of the insufficient reason principle between the two probability distributions. The first is a length-distribution determined by an arbitrary occurrence we have no further useful information about. However, the surface-distribution is not only conditional on what the first distribution turns out to be: it is also constrained by the formula $S=L^2$, which is information we do possess. Nothing in principle forbids us from saying that the equipollent probability for the surface area holds not between S<0.25ft^2 and S>0.25ft^2 because a square's surface area must be in any case L^2, which is information available even if the determination of L between 0ft and 1ft is random. While the length-distribution probability has no information we can rely on, the surface-distribution does at least have one piece of information we can appeal to, namely $S=L^2$.

The reasoning presented above aligns with Roger White's defense of the Principle of Insufficient Reason (2010). White argues that our application of the principle is consistent, but troubles arise when our evidence lacks the required qualitative support because we lack the required information to ascertain to which degree a certain proposition is supported. This does appear to be the case in skeptical instances of evidential underdetermination. To talk about evidential support in terms of *degrees* vis-à-vis skepticism seems overall misguided. This is not the case with Van Fraassen's cube case, as we do know a fair amount of information regarding the situation, such as the randomness of the cube-building device and the surface area formula. Once we understand how the two cases are asymmetrical, the inconsistency disappears.

Dodd (2012, p.346) has replied that if this is so, then there is a problem for UP*-based arguments: how do we know E doesn't favor H over SK? However, the skeptic can happily agree with this statement. She can maintain that we do not know this either, but as long as something conclusive in favor of H or SK is not provided this does not make the corresponding skeptical argument unviable. The possibility of refuting the insularity of reasons, which is the outcome of the UP*-based argument, is compatible with heeding the UP*-based requirement of possessing genuine evidential grounds for our beliefs to be justified (Wang 2014, p.1139). This also allows us to counter a complaint against the overall underdetermination-based strategy. Why should we accept that E doesn't favor H over SK? For example, in a recent paper by Martin Smith (2022), it is held that any anti-skeptic should reject this premise a priori because it just equates to skepticism. However, this is not only untrue, as its acceptance can very well be provisional, but it would also jettison the requirement to provide positive evidence or reasons for why we presume our belief H to be favored over SK, a harbinger of dogmatism. What is up to the epistemologist is instead this very task. To show how our evidence can break the tie instituted by the UP*-based problem. But this is not a rejection of its premises, nor the intuition behind them. It would amount instead to a solution of the radical skeptical problem. Any anti-skeptical proposal worth its salt must live up to this task.

8. Conclusion

In this analysis, we have shown that Cohen's arguments against Brueckner fail. Due to the distinctive character of skeptical questioning and associated scenarios, Cohen's cases for the pre-eminence of closure and against their logical equivalence both fail. However, what we have argued for and defended here might appear on its own as the epitome of idle abstract theorizing. If our reasoning holds, what are its weighty consequences on the current epistemological debate, if there are any?

Let us start with the most immediate conclusions we can draw. Firstly, we provided something comprehensively missing in the current debate: a plausible account of Brueckner's argument for logical equivalence between the principles.[40] Brueckner undermined his argument by relegating a crucial insight to a footnote, and even there, he failed to explain it in a non-ambiguous way. The argument presented in section six manages to refute the contention that Brueckner's argument relies on an illicit conflation of absence of evidence with evidence of absence.[41] The peculiarity of the skeptical scenario supports an entailment that would otherwise be understandably questionable.

Secondly, we have provided a reason to be suspicious of approaches that appeal to symmetries with cases of ordinary underdetermination to motivate anti-skeptical strategies. The peculiarity of radical skeptical scenarios forbids analogies with cases of underdetermination in science or ordinary contexts. In such cases, competing hypotheses often enjoy different degrees of rational support based on evidence while falling short of justification for either one. However, having actual, uncancellable support that bestows on SK or ¬SK an advantage over the other cannot fall short of being conclusive. This could also be glimpsed from something we noticed while presenting Cohen's argument. Our evidence cannot deny both SK and H, while this is indeed a possibility for pairs of incompatible ordinary propositions. Appeals to the probability a proposition based on available evidence possesses are useless in dealing with skepticism except when this probability is 1. This has an additional consequence. Accounts of skepticism and attached anti-skeptical strategies based on explanatory principles[42] miss the skeptical problematic entirely. If we could appeal to prior probabilities that bestowed higher degrees of rational

[40] Something that for example is missing in Boult 2013, cf. p.1129. Otherwise. the results of our analysis is in agreement with Boult's while covering different ground.

[41] Which is Wang's (2014) main point against Brueckner.

[42] Such as Cohen's own explanatory argument for the minor premise of the CJ*-based argument, or Jonathan Vogel's anti-skeptical abductivism.

support to ¬SK rather than SK due to explanatory simplicity, we would have a reason to reject skepticism outright as false because explanatorily implausible. The reason why the current scientific community rejects MONDs is in part due to considerations of explanatory simplicity and power. However, due to the peculiarity of radical skepticism, skeptical underdetermination precisely targets the epistemic merit of this prior support such attempts must appeal to. We must demonstrate and defend that these priors actually obtain, not simply assume them as valid independently of the underdetermination-based question.

These two initial points are connected to the overt main result of our analysis. Underdetermination is the fundamental skeptical problem. It provides the crucial minor premise without which the closure-based argument could not work. The employment of the closure principle in skeptical scenarios is in all respects equivalent to underdetermination. It already expresses the underdetermination problem in its modus tollens route. It is now clear how a rational principle of epistemic deduction can turn against us as a skeptical weapon. If we managed to attest to the epistemic merit of our evidence, nothing could forbid us from simply laying claim to the modus ponens route and employing deductive closure unproblematically. As long as we do not engage with and solve underdetermination skepticism, this maneuver remains crucially defenseless, and the only warranted route available is the skeptical modus tollens.

Our analysis has further consequences for anti-skeptical biscopic proposals such as Pritchard's (2015) that rely on the two principles being distinct sources of skepticism. We have offered an argument to the extent that closure and underdetermination are logically equivalent in skeptical contexts. Therefore, the need to offer distinct solutions vanishes and anti-skeptical proposals can reasonably pursue a unitary and more parsimonious strategy. Additionally, anti-skeptical accounts that focus on either rejecting or preserving closure are revealed as insufficient when considered in isolation for addressing the skeptical issue, even

as modal conditions on knowledge.[43] Sensitivity and Safety-based approaches require the establishment of modal neighborhoods in order to evaluate whether the target belief satisfies the chosen condition on knowledge. However, the way the modal neighborhood is structured has a distinct effect on the quality of the evidence that grounds the belief. For example, if I see a barn in the country-side while driving, the belief will be safe because it could not have been easily false. On the contrary, if I'm driving in fake-barns country, the belief is not safe because it *could* have been easily false even if what I'm seeing is a real barn. This means that the evidence I have available in the first case is of the required quality for my belief to be knowledge, and in the second case it is not. By establishing a modal neighborhood in a certain way to evaluate a belief, one is also at the same time establishing to a significant degree the quality of the evidence available to a subject in the various cases. And this is where the problem with modal approaches as anti-skeptical answers considered in isolation lies. The underdetermination problem asks us to provide some satisfactory – i.e. non-arbitrary, non-circular – reason as to why the modal neighborhood is structured so that available evidence possesses the required quality for the belief to be knowledge. Without an answer to this question, the presumption that things are as laid out in the relevant modal neighborhood remains a mere presumption and has little anti-skeptical weight. This does not mean that modal approaches must be entirely ditched nor that they are worse alternatives than other conceptions of knowledge or justification. It does however indicate that modal approaches need appeal to some different epistemological arsenal to provide an answer to underdetermination, i.e. to possess anti-skeptical relevance.[44]

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[43] This doesn't mean that modal conditions on knowledge have to be rejected tout court. We are merely remarking how simple appeal to modal conditions *only* in anti-skeptical arguments will have little anti-skeptical import.

[44] So this does not suggest that modal approaches are *unviable*, nor that requirements about subjective discrimination are needed. It does suggest that modal conditions of knowledge might be ill-equipped as standalone anti-skeptical strategies, and they ought to be endorsed *after* addressing the problem of underdetermination. A further argument against the purported anti-skeptical weight of modal approaches, also arguing that they are ill-equipped to address underdetermination is due

A consequence of our arguments is that appeals to closure are redundant to motivate skepticism. However, this might expose the flank to objections arguing that it also undercuts the intuitive pull of skepticism, as only a skeptic will find the underdetermination-based intuition plausible (Alspector-Kelly 2019, p.55, Smith 2022). However, this is mistaken. The requirement of establishing our beliefs as possessing non-arbitrary epistemic merit is a reasonable condition on any account of human knowledge and associated theories of justification. The UP*-based argument only needs this insight to be formulated. This objection covertly understands skepticism as relying on some a priori thesis, such as the sameness of evidence lemma, which states that the evidence available in both the good and the bad case is necessarily always the same. But this is an assumption the skeptic need not endorse as something necessary and unchangeable, as it would be plainly unjustifiable and dogmatic. Instead, the task is on us, those who think that skepticism can be vanquished, to offer an account of evidence and rational support that resolves the neutrality instituted by underdetermination in a rationally acceptable manner.[45] This is compatible with taking the underdetermination-based skeptical problem seriously and offering an acceptable solution to *our own* epistemic standards.

The above point is tied to the final result of our analysis. In footnotes eight and twenty-six, we have mentioned that the UP*-based argument has been recognized in the literature as embodying an essentially Pyrrhonian strategy. However, this point hasn't been clearly developed thus far beyond the mere acknowledgment that skeptical underdetermination issues equipollence. The Pyrrhonian aspect of underdetermination suggested emerges in our analysis as the request for the non-arbitrary, non-circular establishment of the epistemic

to Pritchard (2005b, pp.206-7). Pritchard's argument focuses on the fact that modal approaches cannot eliminate reflective luck.

[45] The sameness of evidence lemma says that skepticism requires evidence to be necessarily the same in good and bad cases. What we argued for here is slightly different. For radical skepticism to ensue, there must be a problem of evidential neutrality to be solved. This is compatible with evidence being ultimately different in good and bad cases, as our SK/¬SK table also shows.

merit of our beliefs. The Aenesideman modes present a question concerning the possibility of rational decision between incompatible alternatives, with suspension of judgment issued until the matter remains undecided. When arguments are offered to decide the question conclusively, the Agrippan modes make thereafter a case that the proposed solution cannot satisfy our own epistemic standards. This is the skeptical dialectic we engage within the underdetermination problem. In order to break the tie between alternatives, an account for the epistemic merit of our beliefs must be provided so that we can rationally decide. In addition, this account cannot run afoul of rational norms we would find unobjectionable in ordinary epistemic endeavors. In contemporary epistemology, radical and Pyrrhonian skepticism are customarily handled separately, as if they inhabited parallel epistemological concerns. By understanding the underdetermination problem as embodying an essentially Pyrrhonian strategy and arguing for its fundamental role in constituting the customary argument for radical skepticism, we suggest that we must face a single, unified skeptical threat.[46]

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[46] What we argued for here also offers an advancement with regard to other recent proposals that defend Brueckner's insight and object to Cohen's. McCain (2012) limited his argument to propositional justification. Our argument has no such limitations. Boult (2013) didn't expose a flaw in Cohen's reasoning, but argued against the explanatory backdrop Cohen employed to explain our ignorance of ¬SK. Lastly, Briesen (2010) defends UP based on explanatory considerations. We reject this reading and instead defend UP as a question concerning the epistemic merit of our beliefs in general.

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