

# WOULD DISAGREEMENT UNDERMINE PROGRESS?\*

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## Abstract

In recent years, several philosophers have argued that their discipline makes no progress (or not enough in comparison to the ‘hard sciences’). A key argument for this pessimistic position appeals to the purported fact that philosophers widely and systematically disagree on most major philosophical issues. In this paper, we take a step back from the debate about progress in philosophy specifically and consider the general question: How (if at all) would disagreement within a discipline undermine that discipline’s progress? We reconstruct two distinct arguments from disagreement to a lack of progress, and argue that each rests on underscrutinized assumptions about the nature of progress. We then provide independent motivation to reject those assumptions. The upshot of these considerations is that widespread expert disagreement within a discipline is compatible with progress in that discipline. Indeed, progress can occur even as such disagreement increases. However, disagreement can undermine our ability to tell which developments are progressive (and to what degree). We conclude that while disagreement can indeed be a threat to progress (in philosophy and elsewhere), the precise nature of the threat has not been appreciated.

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## Introduction

In recent years, several philosophers have voiced concerns about philosophical progress, worrying that their discipline makes no progress, or not enough compared to the ‘hard sciences’ (Dietrich, 2011, Horwich, 2012, Chalmers, 2015). The most prominent line of argument for this pessimistic position appeals to the empirical claim that philosophers widely and systematically disagree on most major philosophical questions (Rescher, 2014, Chalmers, 2015, Beebe, 2018). Some more optimistic philosophers have responded by disputing the extent to which philosophers disagree (Cappelen, 2017), or by emphasizing that widespread disagreement on some questions is accompanied by widespread agreement on others (Stoljar, 2017, Frances, 2017). Nearly all parties to these debates, however, seem to agree on the conditional claim that if there is widespread disagreement on philosophical questions, then this would undermine philosophical progress.

In this paper, our aim is to place this conditional claim under scrutiny. We address whether disagreement is *incompatible* with progress, merely a *causal impediment* to progress,

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\*This is a penultimate draft of an article that has been accepted for publication in *The Journal of Philosophy*. Please cite the published version when available.

or even just something that makes progress *epistemically elusive*. Our approach is to take a step back from the debate about *philosophical* progress and ask the more general question: How (if at all) would disagreement with respect to some question, within any given discipline, undermine that discipline’s progress on that question?<sup>1</sup> Addressing this issue sheds light on broader concerns about progress and disagreement, since philosophy is far from being the only academic discipline in which there are unresolved disagreements. Indeed, even within the ‘hard sciences’, disagreements regularly occur and sometimes persist. Our discussion therefore explores general issues about disagreement and progress that have thus far received insufficient attention.

We reconstruct two distinct arguments from disagreement to a lack of progress, and argue that each rests upon assumptions that ought to be rejected. Our discussion paints a more nuanced picture of the interaction between disagreement on a given question and progress on that question, both in general and in philosophy in particular. We argue that on a plausible understanding of what progress (in philosophy or elsewhere) consists in, disagreement need not undermine progress, even when it’s widespread and persistent. Indeed, perhaps surprisingly, we make the case that progress can occur even as disagreement increases. With that said, we also illustrate how in the presence of certain patterns of disagreement we will often be unable to tell which developments are progressive (and to what degree). In addition, we suggest that while disagreement can play a causal role in impeding progress, it can also causally promote progress. We thus conclude that the extent to which disagreement threatens the possibility of progress has been overstated, while the extent to which it threatens our ability to identify progressive episodes has been underappreciated.

## 1. Progress and Disagreement

In this section, we start by considering the debates between optimists and pessimists about progress in philosophy and the role that disagreement has played in these debates (§1.1). We then explain and motivate our methodological approach of focusing on the general question of whether disagreement on some question, within any given discipline, undermines progress on that question (§1.2).

### 1.1. *Philosophical Progress and Disagreement*

Debates about philosophical progress have largely focused on whether, and the extent to which, philosophy has made progress in the past. Answering this question is not only intrin-

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<sup>1</sup>In focusing on progress with respect to answering a question, we focus on what is sometimes called *cognitive* (Niiniluoto, 2019, §2.1) or *epistemic* (Stoljar, 2017, 22) progress, i.e., the kind of progress that comes in the form of theories or explanations of some sort. We are thus not directly concerned with various other developments that are potentially progressive in a wider sense of the term, such as raising new questions, putting forth novel arguments, developing new research tools, or proposing entirely new frameworks within which questions are asked and answered — except in so far as such developments themselves *lead to cognitive/epistemic* progress, i.e., to progress with respect to answering some question. As an anonymous reader points out, some philosophers might contend that philosophical inquiry does not aim to make cognitive/epistemic progress at all, but rather aims only to question philosophical questions themselves or their frameworks. However, as is evident from the literature we discuss below, many philosophers do think that answering philosophical questions is an important aim of philosophical inquiry and that it is crucial to its progress. We share this assumption and take it for granted in what follows.

sically important, but also valuable in providing an indication of whether, and the extent to which, philosophy is likely to make progress in the future. Indeed, some answers would seem to threaten our discipline's *raison d'être*: if philosophy has made no progress, and is thus unlikely to do so in the future, it is unclear why we should spend so much of our time and society's resources on philosophical research. So has philosophy made progress — and if so, how much?

*Pessimists* about philosophical progress argue that philosophy has either made no progress, or not enough when measured against some benchmark, e.g., the amount of progress made in the natural sciences (see, e.g., Dietrich, 2011, Horwich, 2012, Chalmers, 2015).<sup>2</sup> Pessimists often make this case by appealing to persistent and intractable disagreement between philosophers about how to answer to philosophical questions (van Inwagen, 2004, van Inwagen, 2006, lecture 3, Horwich, 2012, Rescher, 2014, Chalmers, 2015, Beebe, 2018). While early work typically appealed to anecdotal evidence of disagreement, more recent work has drawn upon systematic data to support this contention. In particular, Chalmers cites the results of the 2009 PhilPapers survey (Bourget and Chalmers, 2014): “On [...] 23 [of the 30] questions, the leading view has less than 60% support” (Chalmers, 2015, 9).<sup>3</sup> A related worry is that philosophical progress is hampered by the fact that philosophical theories rarely seem to fall completely out of favour in the way that scientific theories do (see Lovejoy, 1917, Sterba, 2004, Dietrich, 2011, Jones, 2017, Shand, 2017, Slezak, 2018). This phenomenon is plausibly a consequence of *unresolved* disagreement about the plausibility of these theories.

*Optimists* argue that philosophy has made an amount of progress they consider reasonable or satisfactory. With a few notable exceptions (Cappelen, 2017, Brock, 2017, Bengson et al., 2019), optimists have agreed with pessimists that disagreement would be a threat to philosophical progress. They typically respond to this threat by arguing that disagreement is less prevalent than it appears to be (Rapaport, 1982, Goldstein, 2014, Cappelen, 2017, Frances, 2017, Stoljar, 2017). Of course, this is largely an empirical question. Accordingly, some optimists suggest that the results of the aforementioned Philpapers survey may not in fact be representative of the empirical reality (Cappelen, 2017, Frances, 2017, Stoljar, 2017).<sup>4</sup> The question is not merely empirical, however, since determining the extent to which there is disagreement within philosophy requires taking a stand on various conceptual issues about how to measure philosophical disagreement. Similarly, it is not clear how to separate a philosophical question from a non-philosophical question in a principled way, in part because these are often entangled in practice (Stoljar, 2021).

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<sup>2</sup>For comparisons of the extent of philosophical and scientific progress see *inter alia* Russell, 1912, Rapaport, 1982, van Inwagen, 2004, Rescher, 2014, Chalmers, 2015, Gutting, 2016, Stoljar, 2017, Brock, 2017, Kamber, 2017, Cappelen, 2017, Frances, 2017, Jones, 2017, Bengson et al., 2019, McKenzie, 2020, Dellsén et al., 2021. Moody (1986) calls the analogy into question, arguing that philosophy makes progress of a different kind.

<sup>3</sup>As we effectively note below (see footnote 20), Chalmers' point still stands in light of the more recent 2020 Philpapers survey data (Bourget and Chalmers, 2021).

<sup>4</sup>In particular, Stoljar (2017) makes the case that disagreement about how to answer the philosophical questions currently under discussion distracts us from a history of coming to agree on the answers to philosophical questions. He suggests that “considerable convergence on how to answer the earlier big questions” (Stoljar, 2017, 126) has been obscured by the emergence of *successor problems*, which often share a name with their predecessor(s). For example, according to Stoljar there have been multiple mind-body problems, and there is agreement on how to solve at least some of them.

In this paper, we set aside questions about how much disagreement there actually is in philosophy, on which issues philosophers in fact disagree, and how exactly to measure such disagreements. Our concern as it relates to philosophical progress is with the question of how, if at all, disagreement among philosophers on a given question *would* undermine progress on that question. Put differently, we are concerned with exploring the conditional claim that *if* there is disagreement among philosophers about the answer<sup>5</sup> to a philosophical question Q (i.e., disagreement on Q), *then* there has been no progress with respect to Q (alternatively: less than there would have been otherwise). Although this conditional claim is clearly a key component in any argument from disagreement to pessimism about philosophical progress, it has received scant attention so far.<sup>6</sup>

### 1.2. Generalizing Our Topic

Instead of limiting our discussion to disagreement and progress in philosophy, we explore the more general question of how disagreement in any given discipline would undermine progress in that discipline. Our reasons for this approach are fourfold.

First, consider that most philosophers entering the debate about philosophical progress do so with a set of preconceptions and strongly held views on particular questions. Deontologists may believe that Kant made significant progress with his *Critique of Practical Reason*, while the consequentialists down the hall might have other ideas. In addition, many of us have a vested interest in securing an optimistic conclusion. To discover that philosophy has made little to no progress would be to discover that our research endeavors have been in vain, in which case public funding of philosophical research would arguably be difficult to defend.<sup>7</sup> By considering the issues surrounding disagreement and progress in a more general manner, we hope to initiate a discussion that sets this baggage aside — for ourselves and for our readers.

Second, we pursue this general approach because disagreements are prevalent in many disciplines besides philosophy. Insofar as disagreement undermines progress, this concern generalizes to other disciplines in which disagreement is commonplace, such as sociology, anthropology, and economics. Indeed, with regard to the latter, Cappelen (2017, 73) goes so far as to claim that “[t]here’s no more consensus about Big Questions in economics than in philosophy”. Likewise Stoljar (2017, 121-142) points out that the concerns philosophers have raised about disagreement and progress could be raised regarding recent debates in physics. Moreover, scientists queried on the prevalence of disagreement in their own field of

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<sup>5</sup>It is perhaps worth noting that although we frequently refer to ‘the answer’ to a question, this does not presuppose that there can only be one answer to a given question, nor that such an answer is true (and that other answers are false). Indeed, on some theories of progress mentioned below, false answers may contribute significantly to progress (see, e.g., footnote 19).

<sup>6</sup>The most notable exception is Cappelen (2017), which we discuss below. To be sure, there is a substantial literature about various epistemic implications of philosophical disagreement, such as whether it undermines knowledge, rational belief, assertability, or publishability of philosophical views (Goldberg, 2013a, Kelly, 2016, Barnett, 2019, Plakias, 2019, Fleisher, 2020). While we draw on this literature below, it will become clear that the epistemic implications of philosophical disagreements do not, without substantive further assumptions, imply anything about how much progress has been made in philosophy.

<sup>7</sup>This is not to deny that academic philosophy might be valuable in other ways, e.g., in teaching critical thinking skills to students. But *research* in philosophy would presumably be hard to rationalize if such efforts never constitute progress.

expertise report a greater extent of disagreement than one might expect to see in the ‘hard’ sciences with which philosophy is often contrasted in this respect (e.g., by Chalmers (2015)). A recent study found that astrophysicists, for instance, judge on average that there is ‘some’ disagreement (as opposed to ‘none’, ‘very little’, or ‘a great deal’) on cosmic ray physics (Beebe et al., 2019).

Not only is there disagreement in the sciences, scientists have themselves expressed concern about the consequences of such disagreements for progress in their fields. For instance, cognitive scientists Khemlani and Johnson-Laird (2012, 2) describe a persistent disagreement within their field as “a small disaster”, adding that “[i]f psychologists cannot converge on a single theory of monadic reasoning, then the last 30 years of research have failed or at best made so little progress that skeptics may think that cognitive science itself is not feasible”. Although Cappelen (2017, 73) claims that in economics “we don’t find nearly the same level of handwringing and agonizing” about the fact that there is no consensus on answers to the central questions in the discipline, there is evidence that economists’ hands are not fully unwrung either (see, e.g., Klamer and McCloskey, 1989, Solow, 1982). Finally, when the aforementioned astrophysicists queried by Beebe et al. were asked to respond on a Likert scale from 1 (‘completely disagree’) to 7 (‘completely agree’) regarding whether disagreement “sometimes leads me to become less confident in my own opinions [about astrophysics]”, the mean response was 4.5, which is above the neutral midpoint of the scale to a statistically significant degree (Beebe et al., 2019, 46).

A third reason to examine the connection between disagreement and progress in a general manner concerns what it implies about accounts of scientific progress. Four of the most prominent accounts are the *truthlikeness account*, which identifies progress with our theories becoming closer to the truth, i.e., more truthlike (Niiniluoto, 1980, 2014); the *problem-solving account*, which identifies progress with solving or eliminating empirical or conceptual problems (Laudan, 1977, 1981); the *epistemic account*, which identifies progress with the accumulation of knowledge (Bird, 2007, 2016); and the *noetic account*, which identifies progress with enabling increased understanding (Dellsén, 2016, 2021). Interestingly, none of the extant discussions of scientific progress take up the issue of scientific disagreement explicitly. Instead, it seems to be taken for granted, perhaps as a simplifying assumption, that there is consensus on the relevant scientific theories, which can then be evaluated according to their closeness to truth (or the problems they solve, etc.). But what happens when this assumption fails? An account of scientific progress worth its salt must address this common situation.

A fourth and final reason to discuss whether disagreement undermines progress more generally concerns the vague, fluid, and perhaps even non-existent boundary between philosophy and other disciplines. Had we exclusively focused on disagreement and progress in philosophy, it would arguably be incumbent on us to draw a line around those questions that we take to be genuinely ‘philosophical’. Our current approach avoids this issue, and is thus congenial to those who endorse Quine’s (1957) dictum that philosophy is continuous with science, and those who are pessimistic about resolving Popperian (1959) demarcation problems quite generally. Likewise for those concerned that philosophical and non-philosophical claims are *entangled*, in the sense that non-philosophical claims commonly appear in arguments for philosophical conclusions (Stoljar, 2021).

## 2. Two Arguments from Disagreement

How, exactly, is disagreement supposed to undermine progress on a given question? How does the argument go?

To begin, consider that, by anyone's lights, not just any old disagreement would undermine progress. In order for disagreement to even potentially undermine progress, the disagreement needs to be at least somewhat *widespread*.<sup>8</sup> A rogue dissenting scientist or philosopher who disagrees with the rest of their colleagues would hardly undermine progress, whereas a 60-40% split might. Furthermore, it seems that not all scientists/philosophers with dissenting viewpoints contribute to disagreement of the troublesome kind, because some of them will fail to genuinely be experts on the relevant question (due to a division of cognitive labor within their field). In sum, then, what most plausibly undermines progress on some question is *widespread expert disagreement*, i.e., widespread disagreement among those who genuinely are experts on that question. In what follows, unless we explicitly indicate otherwise, this is the type of disagreement with which we will be concerned.<sup>9</sup>

In what follows, we reconstruct two quite different arguments from disagreement to a lack of progress, and argue that considering these arguments separately reveals two different ways in which we ought to reconceive of the notion of progress.<sup>10</sup> In brief, the first argument is that disagreement constitutes higher-order evidence that defeats our justification for, or knowledge of, any of the discipline's proffered answers to a given question. Call this *the higher-order evidence argument*. The second argument is that disagreement is incompatible with collective convergence, in that disagreement prevents any one answer to a given question from being the collective answer provided by the discipline as such. Call this *the non-convergence argument*. We now turn to spelling out these arguments.

### 2.1. Disagreement as Higher-Order Evidence

One argument from disagreement to a lack of progress takes its cue from recent work in the epistemology of peer disagreement (Stoljar, 2017, 130-132; see also van Inwagen, 2004, 304).<sup>11</sup> Following standard usage, let us say that two or more agents are epistemic *peers*, with respect to some proposition P, just in case they are (roughly) equally competent reasoners regarding P and (roughly) equally well-informed regarding P.<sup>12</sup> A number of prominent epistemologists

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<sup>8</sup>Perhaps in order to undermine progress the disagreement must also be honest (i.e., a disagreement in which disagreeing parties express their sincere beliefs). For simplicity, in what follows we consider honest disagreements, since dishonest disagreements would raise other issues that are orthogonal to our concerns in this paper.

<sup>9</sup>Some discussions of the epistemic implications of philosophical disagreement have focused on a narrower set of disagreements, such as systematic and/or persistent disagreements (see, e.g., Goldberg, 2013a, 169-217, Daly, 2017). For our purposes, these conditions would unduly restrict the range of disagreements that at least potentially undermine progress. For example, it seems a mistake to rule out temporary disagreements, since if persistent disagreement undermines progress, then temporary disagreement would undermine progress for precisely the same reasons – albeit temporarily so.

<sup>10</sup>Stoljar (2017, ch.7) discusses similar arguments as well as other concerns regarding disagreement and progress.

<sup>11</sup>For an overview on the epistemology of peer disagreement see Frances and Matheson, 2019.

<sup>12</sup>King (2011; see also Elga, 2007) argues that in the strictest sense of 'epistemic peer', disagreeing epistemic peers are hard to find in real-life circumstances. Stoljar (2017, 135) similarly suggests that disagreements

have argued for *conciliationism*, the view that an agent who encounters one or more peers (in the above sense) who disagree with them regarding P would thereby come to have less justification for believing P (or indeed no justification at all). Conciliationism is motivated by the thought that learning that an equally rational and well-informed reasoner has formed a contrary belief regarding P ought to make one question whether one’s own evaluation of P was correct after all. In essence, the discovery that your peer disagrees with your belief that P acts as higher-order evidence that your first-order evidence regarding P does not support P to the extent that you previously thought.

It is not hard to see how this type of argument might be applied to widespread disagreements among experts in disciplines such as philosophy and the various sciences. After all, many of the disagreeing experts in question will presumably be one another’s epistemic peers (or near enough), at least if we are using ‘expert’ to refer to the very top researchers on a given question.<sup>13</sup> So if and to the extent that these experts disagree about the answer to some question, conciliationist reasoning suggests that each expert has reason to moderate their opinion in response to the disagreement (or their confidence in it). In addition, if the disagreement is sufficiently widespread, then each expert would seem to lack sufficient justification for outright belief in any answer. For analogous reasons, each expert would also seem to fail to have knowledge.

Goldberg (2013a, 2013b; see also Goldberg, 2009, Frances, 2013) develops a version of this argument that applies to philosophical disagreements specifically, many of which exemplify a specific kind of widespread peer disagreement that Goldberg calls “systematic peer disagreement”. According to Goldberg, if agent S believes a proposition P on which there is systematic peer disagreement, then “S’s belief is neither knowledgeable nor doxastically justified” (Goldberg, 2013a, 279). Goldberg’s conclusion is that we generally do not have justification for, or knowledge of, philosophical claims, and we should thus adjust our standards regarding when it is normatively appropriate to assert philosophical claims (Goldberg, 2013b). A similar argument is made by Barnett (2019), who concludes on the basis of widespread disagreement in philosophy that philosophers should not believe controversial philosophical views (see also Carter, 2018, Plakias, 2019). The same type of reasoning applies to scientific disagreements as well (see Fleisher, 2018, Dellsén and Baghramian, 2020).

Importantly, the contention that widespread expert disagreement undermines justification and/or knowledge does not yet provide an argument that disagreement undermines progress on a given question. To do so, we must add the additional premise that in order to make progress on a given question, the answers accepted by experts must be justified and/or known. In sum, then, the argument would have to take something like the following form:

### **The higher-order evidence argument**

$[D \rightarrow \neg J]$  If there is (sufficiently) widespread expert disagreement on a question Q, then the relevant experts are not justified in believing, and/or do not know,

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among epistemic peers who are precisely as competent reasoners and who have exactly the same evidence may be impossible. As our formulations in the main text intimate, we are not using ‘epistemic peer’ in the strict sense of King and Stoljar.

<sup>13</sup>Recall from footnote 12 that we are using ‘epistemic peer’ in a sense that does not require peers to be precisely equally competent reasoners and to have exactly the same evidence.

the answer to Q.

$[\neg J \rightarrow \neg P]$  If the relevant experts are not justified in believing, and/or do not know, the answer to Q, then there has been no progress with respect to Q (alternatively: less progress than there would have been otherwise).

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$[D \rightarrow \neg P]$  If there is a (sufficiently) widespread expert disagreement on Q, then there has been no progress with respect to Q (alternatively: less progress than there would have been otherwise).

This simple two-premise reconstruction reveals that there are two quite different ways in which this argument might fail. On the one hand, the argument rests on a claim in the epistemology of disagreement that might be rejected, i.e.,  $[D \rightarrow \neg J]$ . This premise would be false if experts can know the answer to Q despite widespread disagreement on Q among their peers. That this might be so is suggested briefly by Chalmers (2015, 14), who reacts to a version of  $[D \rightarrow \neg J]$  by claiming that “at least in some cases, a good argument can ground an individual’s knowledge of a conclusion even when peers reject it.” Cappelen (2018, 69) goes further by claiming categorically that “widespread disagreement about a view doesn’t undermine knowledge”. For Chalmers and Cappelen, then, the above argument fails in virtue of being based on a mistaken epistemological assumption about the capacity of disagreement to undermine knowledge (or justification).

Although Chalmers’ and Cappelen’s responses take some sting out of the argument, it is doubtful whether they dispel the argument entirely. Note that Chalmers claims only that knowledge is possible despite peer disagreement “at least in some cases”. Moreover, he offers no argument to this effect, or any rebuttal of any of the various lines of argument in favor of the contrary position that have been explored in the recent literature on peer disagreement.<sup>14</sup> Cappelen does not offer any such arguments or rebuttals either, but instead defers to Kelly’s (2016) discussion of the epistemic upshots of philosophical disagreements. However, although Kelly argues that no prominent view in the epistemology of disagreement rationalizes *wholesale* agnosticism about philosophical claims, he nevertheless acknowledges that standard conciliatory views imply that agnosticism is called for in cases where “credible philosophical opinion [...] is divided more or less evenly” (Kelly, 2016, 391). Thus, as far as Kelly’s arguments are concerned, a conciliationist could well run a restricted version of the above argument in which disagreement is defined as *sufficiently* widespread when the relevant experts are “divided more or less evenly” regarding the answer to Q.

Since  $[D \rightarrow \neg J]$  thus appears plausible (especially on the Kelly-inspired interpretation offered above), let us move on to considering the plausibility of  $[\neg J \rightarrow \neg P]$ , i.e., the claim that a lack of justification or knowledge prevents or undermines progress. This claim might initially seem solid, since most if not all groups of experts frequently engage in various activities that aim to provide us with justification and knowledge. Why else would natural scientists, for instance, be concerned with presenting empirical evidence in favor of their theories? And why else would philosophers be concerned with arguing for their views? More generally, what is the point of what we may call *justificatory activities* — such as

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<sup>14</sup>In fairness, this is probably because Chalmers’ main aim is to explore what might *explain* the supposed lack of progress in philosophy, rather than argue for the truth of the explanandum.



argumentation, observation, and experimentation — if justification or knowledge was not required for progress?

There is, in fact, a straightforward answer to this question, drawing upon Bird's (2008) distinction between constituting and promoting scientific progress. A development *constitutes* progress when some relevant aim is thereby fully or partially achieved, whereas a development *promotes* progress when it causes or increases the probability of achieving that aim. With this distinction in hand, it is natural to suggest that the value of justificatory activities might lie in promoting, rather than constituting, progress. For example, it seems undeniable that the main role of an experiment or observation in the natural sciences is to help us identify the correct (or otherwise most progressive) answer to some question. Experiments and observations thus clearly promote progress. Similarly, a strong and convincing philosophical argument would arguably promote progress in so far as it leads to the elimination of an incorrect (or otherwise non-progressive) answer, and/or to the acceptance of a correct (or otherwise progressive) answer. Quite generally, justificatory activities may promote progress on a given question without justification and knowledge being necessary for progress on that question.

In sum, then, the fact that intellectual disciplines engage in various justificatory activities is not a convincing reason to accept  $[\neg J \rightarrow \neg P]$ . But is there any positive reason to reject it? We think so, for there are other ways of undermining justification and knowledge that clearly do not undermine progress.

One such way has to do with the track record of the discipline in question. Consider the *pessimistic meta-induction* (Hesse, 1976, Laudan, 1981), according to which the history of discarded scientific theories should lead us to conclude that currently accepted theories will also be discarded one day. If successful, this argument would undermine our justification for believing scientific theories to be true, and thus our potential to know them (even if they are in fact true). Now, as various authors have pointed out (Lange, 2002, Roush, 2010, Fahrback, 2017), this is not a strong argument for wholesale skepticism about current scientific theories, since many current theories are disanalogous to past theories in various crucial respects. However, it is hard to deny that the argument would undermine our justification for believing *some* scientific theories, such as those in relatively immature disciplines with particularly unimpressive track records (e.g., those hardest hit by the replication crisis; see Ruhmkorff, 2013). These theories might still be true, but the track record of failed theorizing in the relevant field would undermine our justification for believing them.<sup>15</sup>

Now consider what  $[\neg J \rightarrow \neg P]$  implies regarding whether we can make progress on the questions addressed in these (immature) disciplines with dismal track records. Since progress on a question Q would require us to be justified in believing and/or knowing the answer to Q, and since the dismal track record makes that (at least temporarily) impossible, it would follow that progress with respect to Q would be (at least temporarily) impossible. That can't be right. Surely, if the current researchers in one of these disciplines gets things right with regard to Q, e.g., by arriving at a correct and informative answer, then it shouldn't matter whether, or the extent to which, their predecessors were mistaken regarding Q. If anything, finally

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<sup>15</sup>The possibility of a localized pessimistic meta-induction of this type was suggested by Magnus and Callender (2004) and is discussed more systematically by Asay (2019).

achieving success after your predecessors have repeatedly failed is the epitome of a progressive episode. It follows that even independently of issues arising from peer disagreement, there is good reason to reject the idea, formalized in  $[\neg\mathbf{J}\rightarrow\neg\mathbf{P}]$ , that justification or knowledge is required for progress.

Moreover, it is worth noting that only one of the four most prominent accounts of *scientific* progress validates  $[\neg\mathbf{J}\rightarrow\neg\mathbf{P}]$ . The truthlikeness account (Niiniluoto, 1980, 2014) requires only that scientific theories become increasingly closer to the truth, regardless of whether they are justified and/or known. The problem-solving account (Laudan, 1977, 1981) requires only that scientific problems be solved or eliminated, regardless of justification and knowledge. The noetic account (Dellsén, 2016, 2021) only requires increases in scientific understanding, where understanding is explicitly defined so as to not require justification or knowledge. Only the epistemic account (Bird, 2007, 2016), on which progress consists in accumulating scientific knowledge, implies that progress cannot be made in the absence of justification or knowledge. Bird takes this to be an advantage of the epistemic account over its rivals, but this claim is widely contested (see, e.g., Rowbottom, 2008, Cevolani and Tambolo, 2013). Proponents of rival accounts tend instead to emphasize the role of justification in promoting progress, as we have done above (see, e.g., Niiniluoto, 2014, Dellsén, 2021).

We conclude, therefore, that while Chalmers and Cappelen have not provided compelling reasons to reject the premise that disagreement undermines justification or knowledge ( $[\mathbf{D}\rightarrow\neg\mathbf{J}]$ ), there are good reasons to reject the alleged necessity of justification or knowledge for progress ( $[\neg\mathbf{J}\rightarrow\neg\mathbf{P}]$ ). This rejection is not only independently motivated by the possibility of progress by disciplines with dismal track records; it is also implied by all but one of the most prominent accounts of scientific progress in the current literature.

## 2.2. Disagreement as Non-Convergence

A second argument from disagreement to a lack of progress takes its cue from Chalmers' (2015) discussion of philosophical progress.<sup>16</sup> While the higher-order evidence argument focuses on how disagreement impacts the epistemic status of a given answer, Chalmers is primarily concerned with an alleged lack of large collective convergence to the truth (among professional philosophers). Much of Chalmers' discussion focuses on empirical issues about the extent to which there is in fact such a failure of collective convergence due to widespread disagreement among philosophers (for discussion, see Cappelen, 2017, Stoljar, 2017, 121-129). As we emphasized above (see §1.1), however, we set such issues aside in order to focus on the more general issue of whether sufficiently widespread expert disagreement on a given question would undermine progress via a failure of large collective convergence.

The argument we outline below draws upon several threads to be found in Chalmers' discussion. First of all, Chalmers argues that widespread disagreement among (philosophical) experts concerning how to answer a given question, such as those posed in the 2009 Philpapers survey, demonstrates that there has not been what Chalmers calls a *large collective convergence* on any answer (2015, 5). Now, if there has not been large collective convergence on any answer, then *a fortiori* there has not been large collective convergence on the *true* answer (2015, 7). Second, Chalmers assumes that a key 'measure' of progress is

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<sup>16</sup>While Chalmers is concerned specifically with progress on philosophical questions, we shall consider a generalized argument that applies to the questions asked within any discipline.

collective convergence to the truth (2015, 4).<sup>17, 18</sup> Thus the observed lack of large collective convergence on a given question suggests that there hasn't been (enough) progress on that question of the kind that Chalmers focuses on.

We can schematize this argument as follows:

### The non-convergence argument

$[D \rightarrow \neg C]$  If there is (sufficiently) widespread expert disagreement on a question Q, then there has not been large collective convergence (on the truth) with respect to Q.

$[\neg C \rightarrow \neg P]$  If there has not been large collective convergence (on the truth) with respect to Q, then there has been no progress with respect to Q (alternatively: less than there would have been otherwise).

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$[D \rightarrow \neg P]$  If there is (sufficiently) widespread expert disagreement on Q, then there has been no progress with respect to Q (alternatively: less than there would have been otherwise).

In this reconstruction, we place 'on the truth' in parentheses because while Chalmers (2015, 13-14) is specifically concerned with convergence *on the truth*, one can easily imagine a modified version of the argument that is concerned with convergence on whatever cognitive achievement one takes to be constitutive of progress (e.g., an answer with a high degree of truthlikeness, or a solution to a given problem).<sup>19</sup> In what follows, we address this more general version of the argument rather than the more specific argument made by Chalmers.

Let us take a closer look at the premises. The first premise,  $[D \rightarrow \neg C]$ , seems almost trivially true. If there is (sufficiently) widespread expert disagreement regarding how to answer Q, then it straightforwardly follows that there hasn't been large collective convergence with respect to Q. This is not to deny that, in a general sense of the terms 'convergence' and 'disagreement', it is possible for there to be *some disagreement* at the end of a *somewhat convergent* episode, provided that there was *even more* disagreement at the beginning of the episode. However, it seems that Chalmers' phrase 'large collective convergence' must be meant to refer to a process that at least doesn't terminate in a state of very widespread disagreement. After all, all of Chalmers' examples of failures of large collective convergence in philosophy are taken from the 2009 Philpapers survey, which surveyed philosophers' opinions

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<sup>17</sup>Chalmers is not alone in this. Rescher, for example, characterizes progress as "a matter of achieving a rationally substantiated *consensus* on the basic issues of the field" (Rescher, 2014, 3, our italics).

<sup>18</sup>Chalmers acknowledges that there are other forms of progress as well (2015, 14). However, Chalmers insists (*ibid.*) that this does not affect his argument since widespread disagreement, on his view, undermines large convergence to the truth and thereby one form of progress. Chalmers also restricts his claim to collective convergence on what he calls the "big questions" of philosophy (cf. 2015, 5), such as the question of whether humans have free will. However, we take it that his claim applies, to the extent that it applies at all, to questions of all sizes.

<sup>19</sup>The problem-solving account of scientific progress notoriously does not require that solutions to problems are true or even truthlike, as long as they fulfil certain criteria set out by the relevant research tradition (Laudan, 1977, 16,24-25). While this account eschews convergence on the truth as a requirement for progress, it might still require convergence on a single solution.

at a time (rather than investigating how those opinions had evolved over time). If an episode of 'large collective convergence' was compatible with an endpoint in which there was still widespread disagreement, then the data from the Philpapers survey would not have any relevance to Chalmers' argument. In sum, then, we take it to follow from the intended reading of 'large collective convergence' that it is incompatible with an endpoint in which there is sufficiently widespread disagreement, as per  $[D \rightarrow \neg C]$ .<sup>20</sup>

Consider then the second premise,  $[\neg C \rightarrow \neg P]$ . This premise connects convergence with progress, stating roughly that progress on Q demands a large collective convergence with respect to Q. In support of this premise, Chalmers remarks that "[...] some degree of agreement is plausibly required for *collective* knowledge" (Chalmers, 2015, 15, his italics). Unfortunately, Chalmers neither defines 'collective knowledge' nor characterizes it in a way that serves to explain why large collective convergence would be required for collective knowledge or why collective knowledge would be required for progress. If the idea is that lack of agreement — i.e., disagreement — functions as higher-order evidence to undermine the collective justification/knowledge of the community (which in turn is necessary for progress), then the current argument is effectively a version of the higher-order evidence argument, which we have already addressed (see §2.1).

However, there is another plausible interpretation of Chalmers' remark about collective knowledge. If there is too much disagreement in some group of experts regarding how to answer a given question, then it seems that we cannot say that the group, as such, has any *collective answer* to the question. For example, if each of the faculty members in a philosophy department wants to hire a different candidate for an open position, then the philosophy department, as such, perhaps cannot be said to have any collective position on who to hire. Similarly, one might think, if the experts on a given question do not largely agree on how to answer it, then the group composed of these experts has no collective answer to that question. Hence, so the thought goes, we cannot say that there has been progress on that question. Note that the issue here is not about the presence or absence of *knowledge* as such, but rather about there not being a single answer endorsed by the experts.<sup>21</sup>

The notion of a collective answer can be fleshed out in at least two distinct ways that are familiar from philosophical discussions of the nature of collective attitudes. On the one hand, one might suggest that a group of experts has a collective answer to some question just in case some proportion of the experts have the requisite individual attitudes on how to answer it. Most straightforwardly, having a collective answer might be taken to consist in a

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<sup>20</sup>The release of the data from the 2020 Philpapers survey allows longitudinal comparisons of the responses of the very same philosophers to the same questions in 2009 and 2020 (Bourget and Chalmers, 2021). Unsurprisingly, we see no large collective convergence on any of the questions. The biggest swing in favour of a response that was already the most popular was a 2.1% increase in support of the psychological view of personal identity, from 35.6% to 37.7% support.

<sup>21</sup>This interpretation of Chalmers' remark is quite similar to an argument against collective philosophical knowledge given independently by Beebe (2018, 10-12). Beebe grants for the sake of this argument that individual knowledge may be possible in cases of peer disagreement among philosophers (Beebe, 2018, 10). Even so, she argues, philosophers couldn't be said to collectively know much at all, because "[n]o proposition  $p$  that is a matter for persistent peer disagreement can make it onto the list [of collectively known propositions], since there will be no grounds for having  $p$  rather than  $\neg p$  on the list" (Beebe, 2018, 11).

supermajority (e.g., 80% or more) of the experts having the requisite attitude to some answer. Call this *the reductive view*. On the other hand, one might instead suggest that a group of experts has a collective answer to some question just in case *the collective itself*, considered as a group agent, has the requisite attitude to an answer. This requires us to specify how a collective can have any kind of attitude as a group, but, for the sake of argument, let us grant that this could be done (see, e.g., Gilbert, 1989, Bird, 2010). Call this *the non-reductive view*.

Regardless of which of these options one plumps for in analyzing what it is for a group of experts to have a collective answer to some question, the non-convergence argument rests on the assumption that arriving at a collective answer to a question is *necessary* for progress on that question. On reflection, it is hard to see why this would be so, on either the reductive or the non-reductive view. Consider the reductive view first. Suppose that a number of experts come to adopt the requisite individual attitudes during some episode without thereby passing over the relevant threshold required for the discipline to have a collective answer. For example, if the relevant threshold is 80% agreement, then we may suppose that the proportion of experts with the requisite attitudes increases from 65% to 75%. Compare this to an otherwise identical episode in which the proportion increases so as to pass over the critical 80% threshold, e.g., by going from 75% to 85%. Now, given that this latter type of episode would constitute progress, why should the former constitute no, or indeed less, progress? Tying progress to reaching a specific level of agreement seems, on reflection, to be completely unmotivated.

The situation is slightly more delicate if one adopts a non-reductive view of what it would be for a group of experts to have a collective answer to a question. On one version of the non-reductive view, there would be no threshold for how large a proportion of experts must have the requisite individual attitudes; rather, the collective answer would be determined entirely by ‘macro’ features of the group that need not be reflected in individual attitudes at all.<sup>22</sup> On such a non-reductive view, however, large collective convergence would clearly not be necessary for progress even if progress required the group of experts to arrive at a collective answer, since the group might arrive at such an answer quite independently of their individual attitudes. Thus, a non-threshold-imposing version of the non-reductive view would not validate the second premise of the non-convergence argument,  $[\neg C \rightarrow \neg P]$ .

So consider instead a threshold-imposing non-reductive view of what it is for a group of experts to have a collective answer to a question. In addition to imposing such a threshold of agreement (and embracing the aforementioned counterintuitive consequences that result from doing so), such a view would have to, on pain of collapsing into the reductive view, impose some other (non-threshold-based) conditions for the experts to have a collective answer. For example, one might take a cue from Gilbert (1989, 1994) and require that in order for a proposition to count as a group’s collective answer, the members of the group must be *jointly committed to believing it as a body*. Now, with such necessary conditions in place, we can ask why it should only be possible for a group of experts to make progress by coming to satisfy these specific conditions to precisely the extent set down by the account. Is it really necessary for progress that the relevant group of experts come to be jointly committed to believing something as a body?

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<sup>22</sup>Bird (2010, 2014) prominently argues for a view of collective knowledge that explicitly has this feature.

We think not. It is easy to imagine cases in which progress is made on a question despite a lack of joint commitment of this kind. Suppose, for instance, that the experts on a given question refuse, perhaps for some ideological reasons (e.g., a commitment to some extreme form of anarcho-libertarian individualism), to be jointly committed to believing *anything* as a body.<sup>23</sup> Whatever else this might mean for these experts, it surely does not entail that progress cannot possibly be made on that question. After all, the lack of such a joint commitment is perfectly compatible with the experts undergoing a variety of changes which would seem, on their face, to constitute progress on that question. For example, some or even all of the experts may come to discover new truths, gain deeper understanding, and/or accumulate knowledge. Indeed, they might even individually communicate the relevant answers to a wider audience, e.g., via published journal articles. Surely such individual changes could, all other things being equal, constitute progress on the relevant question.

In summary, then, it does not seem plausible that the group of experts having a collective answer would be necessary for progress in the way assumed by the non-convergence argument. Whether we conceive of a ‘collective answer’ as determined by the individual attitudes of the experts (as per the reductive view), or as a *sui generis* collective attitude of a group agent (as per the non-reductive view), the problem is that it seems entirely possible to make progress on a question during episodes in which the relevant experts do not come to adopt any collective answer, e.g., because the level of expert agreement does not pass over the required threshold or because the experts do not cooperate in the way required for *sui generis* collective attitudes.

Although we have only considered two general views of what it might be for a group to have a collective answer to some question, we suggest that there is a broader lesson to be drawn here: Whether or not a group adopts a collective answer is too coarse-grained a cognitive change to be a plausible requirement for progress. Collective answerhood is binary: a group of experts either *has* or *lacks* a collective answer to a question. By contrast, as those writing about scientific progress often emphasize, progress is clearly a matter of degree: in addition to asking whether we have made progress, we can ask whether we have made *more* and *less* of it (see, e.g., Bird, 2007, 84, Dellsén, 2016, 77-78). Indeed, careful reflection on the non-convergence argument reveals that progress is a matter of degree along two axes, including both the extent to which some cognitive change (belief in a new theory, a solution to a problem, etc.) constitutes an improvement on its predecessor, and *also* the extent to which this cognitive change is widespread or influential. Appreciating the fine-grainedness of progress undercuts any motivation for the key premise of the non-convergence argument, viz.  $[\neg C \rightarrow \neg P]$ . If progress can occur in such fine-grained ways, there is no reason to take collective convergence (let alone *large* collective convergence) to be necessary for progress. Nor is there any reason to think that there would necessarily be more progress on a question on which there is (large) collective convergence than one in which there isn’t, since it seems possible to make a great deal of progress by going from a state of collective non-convergence to another state of collective non-convergence.

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<sup>23</sup>This would be analogous to a dysfunctional philosophy department that refuses to undergo the necessary procedures (e.g., by refusing to meet) to form a joint commitment regarding which candidate to hire. Note that this lack of joint commitment is compatible with each department member individually preferring the very same candidate. (This example is a work of fiction. Any resemblance to actual events or philosophy departments, present or past, is purely coincidental.)

With that said, we have not yet presented the entirety of our case against  $[\neg C \rightarrow \neg P]$ , for the simple reason that we haven't yet explored what progress *is* in a way that would clearly validate or contradict this alleged connection between progress and collective convergence. This is the task to which we now turn.

### 3. Progressing through Disagreement

So far we have examined two separate arguments from disagreement to a lack of progress. We have suggested that both arguments rest on implausible assumptions about what's required for making progress with respect to answering a question. Regarding the higher-order evidence argument, we motivated rejecting the assumption that progress requires justification or knowledge,  $[\neg J \rightarrow \neg P]$ . Regarding the non-convergence argument, we motivated rejecting the assumption that progress requires any specific level of convergence,  $[\neg C \rightarrow \neg P]$ . Once we give up on these assumptions, the two arguments from disagreement to lack of progress simply do not go through. In the absence of some other convincing argument connecting disagreement with progress, the result is that progress on a question is plausibly rendered compatible with widespread expert disagreement on that question.

This cannot be the end of the matter, however, for these responses raise another pressing challenge. What, exactly, would it be to make progress on some question given that these assumptions are false? If progress requires neither justification/knowledge, nor any specific level of convergence, what then does it require? In this section, we aim to meet this challenge twice over, by fleshing out not one but two separate accounts of progress on which neither  $[\neg J \rightarrow \neg P]$  nor  $[\neg C \rightarrow \neg P]$  holds true. On both accounts, progress can occur despite widespread expert disagreement — indeed, it can occur even as expert disagreement increases.

#### 3.1. Proportional Veritism

The first account takes its cue from accounts of scientific progress that measure progress in terms of the accumulation of truths or in terms of approaching the truth. We refer to such accounts as *veritistic* accounts. The most prominent such account is the aforementioned *truthlikeness* account of scientific progress (Niiniluoto, 1980, 2014), according to which progress is determined by the extent to which the content of accepted scientific theories becomes more truthlike, i.e., comes closer to capturing the whole truth about the world or some part thereof. Importantly for our purposes, veritistic accounts of progress, such as the truthlikeness account, do not require the relevant theories or answers to be epistemically justified or known. It suffices that the theories or answers are in fact true or more truthlike than their predecessors.<sup>24</sup>

It should therefore be easy to see that  $[\neg J \rightarrow \neg P]$  is simply false on any veritistic account. By definition, these accounts deny that experts must have justification for, or knowledge of, an answer in order for adopting that answer to be progressive. If progress is just a matter of the relevant answers becoming more truthlike, for instance, then progress can occur regardless of whether experts have justification or knowledge regarding these more truthlike answers.

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<sup>24</sup>Whether this is a feature or a flaw of these accounts is controversial (see Bird, 2007, Rowbottom, 2008, Cevolani and Tambolo, 2013, Mizrahi and Buckwalter, 2014, Niiniluoto, 2014).

Progress is thereby rendered compatible with patterns of expert disagreement that undermine justification and knowledge.

However, while the rejection of  $[\neg J \rightarrow \neg P]$  is thus already built into any veritistic account, the same does not hold for  $[\neg C \rightarrow \neg P]$ . After all, some veritistic accounts might require a type of convergence on an answer to a given question in order for the discipline to have made progress on that question. For instance, one veritistic account would hold that progress is made, during a given episode and with respect to a question Q, just in case the experts either (a) move from having no consensus position to having a somewhat truthlike consensus position on Q, or (b) move from having a less to a more truthlike consensus position on Q. In order to render  $[\neg C \rightarrow \neg P]$  false, we need a veritistic account that avoids positing a specific level of convergence below which progress cannot occur.

A straightforward veritistic account with this feature is one which measures progress in terms of the *proportion* of experts which have adopted true or truthlike answers. Thus, what we may call *proportional veritism* is the view that progress is made, during a given episode and with respect to a question Q, to the extent that a greater proportion of experts adopts true or more truthlike answers to Q during the episode. A particularly promising version of proportional veritism is *mean proportional veritism*, the view that progress is made just in case the mean truthlikeness of the experts' answers to Q is higher at the end of the episode than it was at the beginning of the episode. The account, and its merits, are best spelled out with some examples.

Suppose that there are three answers to some question endorsed by the relevant experts.  $A_3$  is more truthlike than  $A_2$ , which in turn is more truthlike than  $A_1$ . Without saying anything about the proportions of experts who endorse each answer, we can see that according to mean proportional veritism, some degree of progress is made whenever an adherent of  $A_2$  comes to accept  $A_3$ , or an adherent of  $A_1$  comes to accept  $A_2$  or  $A_3$  (and nothing else changes in the meantime). Likewise, if some or all adherents of a given answer come instead to accept a new, more truthlike answer, some degree of progress is made according to mean proportional veritism.

For a more concrete case from the domain of philosophy, suppose that the one true theory of normative ethics is some version of rule utilitarianism. Then progress is made whenever, for example, an ethicist replaces her belief in deontology with a belief in utilitarianism (and nothing else changes in the meantime). Even if our ex-deontologist comes to accept some form of *act utilitarianism* (rather than the true version of *rule utilitarianism*), that will still be progressive given that her newly avowed act utilitarianism would presumably be more truthlike than deontology in this scenario. Likewise (assuming for the sake of the example that any version of rule utilitarianism will be more truthlike than any version of act utilitarianism), progress would be made when an act utilitarian comes to accept some version of rule utilitarianism, even if the version she comes to adopt is not maximally truthlike (perhaps she adopts some version of *actualist* rule utilitarianism, while the true theory is an *expectabilist* rule utilitarianism).

Importantly for our purposes, mean proportional veritism is a view on which learning the extent to which there has been convergence or divergence within an episode tells you nothing, by itself, about the degree of progress that has occurred during the episode. To see this, consider two experts, Emilio and Fatima, each of whom accepts, at the beginning of an episode, answers that are truthlike to exactly the same degree. At the end of the



episode, Emilio and Fatima each accept more truthlike answers than before, and these two new answers are still truthlike to the same degree. Assuming that nothing else changes during the episode, this counts as some degree of progress by the lights of mean proportional veritism. More importantly, the degree of progress is not determined by whether Emilio and Fatima accept(ed) *the same answer*, before or after the episode. All that matters is that two experts each came to accept more truthlike answers, whether or not they reached consensus.<sup>25</sup>

Mean proportional veritism even allows for progressive episodes in which consensus is replaced by dissensus. In other words, not only is convergence not required for progress, *divergence* can be *progressive*. This will be the case, for instance, if a community of experts who once shared a consensus in a less truthlike answer,  $A_0$ , become split such that half persist in their belief in  $A_0$  while half come to accept a more truthlike answer,  $A_1$ . In such a case, there would be no disagreement at the beginning of the episode, but significant (viz., 50-50) disagreement at the end of the episode. And yet, provided that the new answer  $A_1$  is indeed more truthlike than the old answer  $A_0$ , mean proportional veritism clearly counts the episode as progressive.<sup>26</sup>

### 3.2. *Enabling Noeticism*

Proportional veritism is a simple account of progress on which progress does not require justification or knowledge or convergence. As noted, that account takes its cue from accounts of scientific progress, such as the truthlikeness account, which place (closeness to the) truth at the heart of scientific progress. The second account we consider takes its cue from Dellsén’s (2016, 2021) understanding-based noetic account of scientific progress. Dellsén’s most recent formulation of the noetic account holds that progress with respect to some phenomenon  $X$  is “a change due to scientific research in the publicly available information that enables relevant members of society to increase their understanding of  $X$ ” (Dellsén, 2021, 10). A natural way to generalize Dellsén’s account is to hold that progress regarding some question  $Q$  occurs whenever relevant members of society are better enabled to increase their understanding with respect to  $Q$ . For reasons that become clearer below, we refer to this view as *enabling noeticism*.

Although the implications regarding the compatibility of disagreement and progress are not as clear-cut on this account as they are on proportional veritism, it will become apparent that enabling noeticism, like proportional veritism, implies that both  $[\neg J \rightarrow \neg P]$  and  $[\neg C \rightarrow \neg P]$  are false.

Following a number of authors (e.g., Kim, 1994, Grimm, 2006, Greco, 2014, Dellsén, 2020),

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<sup>25</sup>Of course, assuming that there is only one maximally truthlike answer to a given question, there will come a point at which repeatedly making progress will require the experts to converge on that answer. But until that point, convergence and divergence have no bearing on the degree of progress made in an episode, according to mean proportional veritism.

<sup>26</sup>We can imagine a more extreme version of the above example in which a community that previously unanimously accepted  $A_0$  (as an answer to a question  $Q$ ) comes to disagree maximally, such that every expert comes to accept a different answer to  $Q$ . According to mean proportional veritism, whether such an episode is progressive depends on how the truthlikeness of  $A_0$  compares with the truthlikeness of the proliferation of new answers. For example, if a majority of experts come to accept answers slightly more truthlike than  $A_0$ , while a minority come to accept answers slightly less truthlike than  $A_0$ , then progress has been made on  $Q$ .

we assume – at least for present purposes – that *understanding* a phenomenon consists in grasping an approximately accurate representation of the network of dependence relations in which the phenomenon is situated. For instance, to understand the event of a car crashing into a tree would involve grasping how different factors (e.g., the car’s bald tire, the icy road) causally contributed to the crash, and which potential causes were irrelevant (e.g., the color of the car, the name of the road). We also assume here (following, e.g., Hills, 2015, Dellsén, 2017) that the relevant notion of understanding differs from standard notions of knowledge in that understanding does not constitutively involve or require epistemic justification or other conditions that may be undermined by higher-order evidence.<sup>27</sup>

While this is just a rough characterization of the notion of understanding we have in mind, it is nonetheless clear that making progress in a discipline would not require justification or knowledge by the lights of enabling noeticism, since this account analyzes progress in terms of a notion of understanding which itself requires neither. A proponent of enabling noeticism would thus reject the higher-order evidence argument as unsound on the grounds that  $[\neg J \rightarrow \neg P]$  is false. Note that this is *not* — at least not yet — to say that the conclusion of that argument is false by the lights of enabling noeticism (there are, after all, unsound arguments for true conclusions). Rather, it’s to say that if there is a sound argument from widespread expert disagreement to lack of progress, then by enabling noeticism’s lights, such an argument would have to appeal to a different feature of such disagreements.

Consider, then, the non-convergence argument, on which disagreement undermines progress because without expert consensus there is no single answer that can be regarded as collectively endorsed by the experts. To evaluate this argument from enabling noeticism’s point of view, it’s important to get clearer on the sense in which the account holds that over time, a progressing discipline *better enables relevant members of society* to increase *their* understanding. Taking our cue again from the noetic account of scientific progress, we note that Dellsén does not simply identify progress in a discipline with an increase in the understanding of relevant experts, or of members of the relevant discipline. Rather, Dellsén proposes to identify progress with the understanding that anyone can, at least in principle, gain by consulting the information that is made publicly available by scientific research, e.g., in journal articles and research repositories (Dellsén, 2021, 9-10). For example, the publication of a medical result in a scientific journal might constitute progress provided that relevant consumers of the result, such as medical professionals and other researchers, are able to consult it in a way that potentially increases their understanding.

For our purposes, the pertinent implication of enabling noeticism is that the cognitive states of the researchers by whom progress is made (before, during, and after the progressive episode) become strictly speaking irrelevant. Indeed, the degree of progress is not determined by changes in *anybody’s* cognitive states. Rather, what’s relevant is whether the right type of information has been made available during the episode, e.g., in the form of published results. To be sure, what counts as the ‘right type of information’ depends on what cognitive changes the information has the capacity to induce: it must, on the noetic account, have the

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<sup>27</sup>To be sure, these assumptions about the notion of understanding are rejected by some accounts of understanding available in the literature (for an overview, see, e.g., Grimm, 2021). Understanding-based accounts that reject these assumptions might yield different verdicts regarding the soundness of the two arguments from disagreement to progress.

capacity to induce *understanding*. Nevertheless, it is the publication of the information — or, more generally, its becoming publicly available — that makes the information contribute to progress, rather than what goes on in the heads of the relevant experts themselves. It follows that, by the lights of enabling noeticism, it would be a mistake to measure the amount of progress during an episode by the number or proportion of researchers who accept a particular theory or result. Rather, we should measure progress in terms of how well the state of publicly available information enables the relevant members of society to increase their understanding.

In order to address the soundness of the non-convergence argument from the point of view of enabling noeticism, let us now consider how a lack of collective convergence would influence the extent to which a given discipline enables increases in understanding. The situation here is somewhat delicate. On the one hand, the enabling noeticist should concede that non-convergence is often strongly correlated with lack of progress. After all, experts who disagree on questions within their domain of expertise will often do so publicly, e.g., in journal publications. In such cases, the would-be recipients of publicly available information might not know where to look for accurate information with which to increase their understanding. Faced with a split group of relevant experts, the natural reaction would be to suspend judgment, which in turns fails to increase understanding and thus doesn't contribute to progress on enabling noeticism.

On the other hand, it would be too quick to infer from this that a lack of collective convergence, as such, is incompatible with progress on enabling noeticism. After all, in the scenarios envisioned above, disagreement only inhibits progress via decreasing the capacity of the publicly available information to induce understanding. Disagreement that failed to be reflected in the publicly available information would make no difference whatsoever to progress. For example, an understanding-inducing answer may be published and subsequently stand unopposed in the public record, at least temporarily, despite being subject to much (unpublished) disagreement amongst the relevant experts. In this case, widespread expert disagreement fails to undermine the capacity of the answer to confer understanding in its audience; indeed the disagreement has no impact whatsoever on the degree of progress achieved in this episode.

To illustrate by returning to our earlier example from normative ethics, suppose that the moral status of an action depends on (e.g., is constituted by, or grounded in) the expected happiness produced by the adoption of a rule which sanctions the action, as per expected rule utilitarianism. If so, then the publication of a clear and cogent defense of expected rule utilitarianism, or more generally a dissemination of this idea in appropriate channels, would (all else being equal) facilitate understanding of morally right action. This is so regardless of whether all, some, or even any experts in normative ethics — including, perhaps, the authors themselves (cf. Plakias, 2019, Fleisher, 2020) — actually come to believe or accept expected rule utilitarianism. Indeed, we may imagine that the publication in question — because phrased slightly provocatively, perhaps — further reinforces the dogmatic acceptance of deontology by a large majority of normative ethicists. Alternatively, we might imagine that the publication of this defense of expected rule utilitarianism wakes some deontologists up from their dogmatic slumber in a way that increases disagreement such that there is no majority view among ethicists. According to enabling noeticism, all of that is irrelevant to progress. What matters is not what goes on in the heads of the relevant experts, but whether

the publicized products of their labor enable understanding among the consumers of those products.

### 3.3. Other Potential Accounts

We have sketched two general accounts of progress to illustrate how the two assumptions about the nature of progress that lead to its being incompatible with disagreement can plausibly be rejected in different ways. We emphasize, however, that there are many other ways of developing accounts of progress that reject these assumptions. For one thing, one can combine the ‘veritism’ of the first account with the ‘enablingness’ of the second, yielding a view on which progress consists in the formation of true or truthlike beliefs being enabled by publicly available information. (And *vice versa*, yielding ‘proportional noeticism’.) In addition, there are arguably promising alternative ways to approach each of these two dimensions.<sup>28</sup> For example, one might generalize the problem-solving account of scientific progress in a ‘proportionalist’ manner, such that the degree of progress is determined by the extent to which a greater proportion of the relevant experts judge more of what they take to be genuine problems to be solved.

## 4. Upshots and Conclusion

It might seem obvious that if there is widespread expert disagreement on some question, then progress has not been made on that question (or less than there otherwise would have been). We have argued that two key arguments for this principle rest on underscrutinized assumptions about what is required for progress. Specifically, we have argued against the assumption that making progress on a question Q requires that experts have justification or knowledge regarding Q; and, similarly, we have argued against the assumption that progress on Q requires any specific level of expert convergence regarding Q. Rejecting these assumptions has several important upshots for how we ought to think about the relationship between disagreement and progress, which we outline below.<sup>29</sup>

### 4.1. Upshots for Philosophical Progress

We start by outlining a set of related upshots that are of particular relevance to the debate between optimists and pessimists about philosophical progress, i.e., the debate about how much progress philosophy has made (e.g., compared to the sciences), before moving on to upshots regarding disagreement and progress more generally. First, optimists are well-placed to resist pessimistic arguments that quickly conclude, from the observed patterns of widespread

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<sup>28</sup>Although the point is orthogonal to our concerns in this paper, there are strictly speaking *three* dimensions along which proportional veritism and enabling noeticism come apart: (i) *which* cognitive states matter for progress, (ii) *whose* cognitive states matter for progress, and (iii) whether these states must *actually* improve, or merely be *enabled* to improve, in order for there to be progress. In the main text, we collapse dimensions (ii) and (iii), but these could come apart. For example, one could propose an account according to which we make progress by enabling experts to accept true or more truthlike answers.

<sup>29</sup>Indeed, the very same upshots follow even for those who are hesitant to reject these assumptions outright; all we need to motivate the upshots below is the acknowledgement that some genuine contenders among accounts of progress — mean proportional veritism and enabling noeticism — entails that these assumptions are false.

and systematic disagreement between philosophers, that philosophy does not make progress. Nor does pessimism follow from *persistent* disagreement between philosophers, or *even divergence* over time, i.e., increasing disagreement. Indeed, it does not even follow from the fact that philosophers disagree more than scientists (or from philosophers converging less than scientists) that there is less progress in philosophy than there is in science. There is nothing in the concept of progress itself that rules out the co-existence of progress and disagreement in philosophy.

Second, the fact that justification/knowledge and convergence can be plausibly rejected as requirements for progress should ease the pressure some have felt to adopt anti-factivist or anti-realist accounts of progress, especially regarding philosophical progress. For instance, Beebee argues that the widespread disagreement among philosophers on many central topics should lead us to “abandon the view that philosophy aims at knowledge” (2018, 1).<sup>30</sup> However, Beebee does not advocate that we retreat to an account of progress that eschews justification/knowledge and convergence requirements but is nonetheless committed to truth or accuracy as a central aim of philosophy (such as proportional veritism or enabling noeticism). Instead, she proposes a much more radical retreat to the Lewisian aim of “find[ing] out what equilibria there are that can withstand examination”, where it is up to each one of us to and “come to rest at one or another of them” (Lewis, 1983, x, quoted in Beebee, 2018, 16).<sup>31</sup> On this view, progress is made in philosophy by identifying sets of views that cohesively hang together, such that sets of philosophical questions can be answered without contradiction or incoherence. With these points of equilibrium identified, there is no further philosophical work to do — no further project of finding out which set of views is true, for example.

Despite Beebee’s avowed hope that this proposed non-factivist account of progress in philosophy is “a relatively conservative position with respect to the practice of first-order philosophy” (2018, 16-17), we suspect that most will agree with Chalmers that thinking of philosophy as seeking something less than truth “involves something of a lowering of our sights” (2015, 14).<sup>32</sup> For those who share Chalmers’ sentiment, the viability of accounts of progress that are factive, yet allow progress despite disagreement and divergence, will be welcome news. To be sure, to endorse these accounts requires rejecting some putative requirements on progress, viz. the justification/knowledge requirement and the convergence requirement. But as we have sought to show above, it is far from clear that these requirements were plausible to begin with. Indeed, even those who find the requirements *prima facie* plausible may be prepared, on reflection, to abandon them in order to preserve the arguably more important element of factivity in their accounts of progress.

Third, our analysis offers provide a new perspective on debates about the extent to which philosophy can provide us with arguments that can be described as ‘knock-down’ (Ballan-

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<sup>30</sup>Positions similar to Beebee’s have been developed or endorsed by Rescher (1978), Moody (1986), and Pigliucci (2017).

<sup>31</sup>Stoljar (2021) disputes Beebee’s interpretation of Lewis as claiming that finding equilibria is the ultimate aim of philosophy.

<sup>32</sup>Indeed Beebee seems to concede this when she says that “[w]hether or not [seeking points of equilibrium] is what [philosophers] think of themselves as doing is another question, of course; I don’t expect equilibrium to be conservative with respect to that” (2018, 17).

tyne, 2014, Keller, 2015, Stoljar, 2017, 140-142) or ‘successful’ (McGrath and Kelly, 2017, van Inwagen, 2006). In particular, on accounts that eschew justification/knowledge and convergence requirements (e.g., proportional veritism and enabling noeticism), progress can be made without the provision of any knock-down arguments powerful enough to convince all comers. Moreover, the bar for a (minimally) successful argument may be set very low indeed. To see this clearly, consider how a mean proportional veritist will think about the role of arguments. On this view, if an argument convinces just one expert to accept a slightly more truthlike answer to a question Q, then (all else being equal) progress has been made with respect to Q. Indeed, on this view, progress is possible despite the epistemically worrying phenomenon of premise deniability in philosophy — i.e., the fact that those who are disinclined to accept the conclusion of a philosophical argument can often plausibly deny one or more of the argument’s premises (Chalmers, 2015, 18). Even if premise deniability undermines the extent to which philosophical arguments provide philosophers with justification or knowledge, and impedes the widespread endorsement of their conclusions, these arguments would still lead to (some) progress on a question Q if they just convince a single expert to accept a more truthlike answer to Q. There is thus cause for optimism about the frequency with which philosophical arguments are ‘successful’ in the sense that they lead to some degree of progress.

#### 4.2. General Upshots

We conclude with some upshots regarding disagreement and progress more generally. As promised, our goal here is to paint a more nuanced picture of the relationship between disagreement and progress. The first and most immediate upshot concerns the alleged significance of disagreement — and empirical investigation of the extent to which there is in fact disagreement — for debates about progress, including both scientific and philosophical progress. Without a doubt, there is intrinsic value in exploring the beliefs of experts regarding a given question — including the extent to which they agree — and in debating whether certain patterns of disagreement among them undermine justification and knowledge. We have shown, however, that the extent to which these debates bear on the progress (or degree thereof) achieved on a given question depends on the role that justification/knowledge and convergence play in one’s account of progress. Given that there are reasons to think neither justification nor convergence is required for progress, and given the availability of plausible accounts of progress that eschew such requirements, there is no quick and easy argument from observed disagreement on a question to pessimism about the extent to which progress has been made on that question.

However, that is not to say that disagreement is entirely unrelated to progress. In particular, disagreement can make much more difficult the *epistemological* question of how to discern whether we have made progress on some question.<sup>33</sup> Given proportional veritism, when an expert regarding a question Q changes her beliefs about the answer to Q, this can be progressive (if the new belief is more truthlike), regressive (if the new belief is less truthlike) or neutral (if the new belief is, miraculously, equally as truthlike as the old belief). Without an Archimedean point from which we can directly access the true answer to Q, we

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<sup>33</sup>Niiniluoto (1980, 2019) refers to this as the *methodological* question of progress, and distinguishes it from the *factual* question of progress (the question of how much progress there has in fact been).

are not well placed to determine the respective truthlikeness of the old and new beliefs, and thus we are not well placed to determine whether this development was progressive. In part, as is evident from the debate about progress in science, this epistemic problem of progress applies to any ascription of progress to a given episode for those who endorse factivist accounts of progress, since we can never say with absolute certainty that a later theory is true (or more truthlike/accurate than earlier theories).<sup>34</sup> However, disagreement arguably aggravates this epistemic problem in so far as it makes it even more difficult to discern which theories, perhaps among several live contenders, are more and less likely to be true (or more truthlike/accurate). Interestingly, this appears to be a respect in which the difference between progress in science and progress in philosophy is more marked. If, and to the extent that, there is more agreement on scientific theories than on philosophical theories, we are arguably epistemically better placed to determine which developments are progressive in science than in philosophy.

Finally, an underexplored connection between disagreement and progress concerns how disagreement can *causally* impede progress. Clearly enough, persistent disagreement on a question often involves a large investment of cognitive resources that could otherwise have been harnessed in answering other questions. In this sense, disagreement on a question can hinder our capacity to make progress on *other* questions.<sup>35</sup> This is not to say that we ought to seek agreement for agreement's sake, since unanimous agreement on a completely wrongheaded answer would presumably impede progress to an even greater extent than most forms of disagreement. Indeed, it has been argued that disagreement can be good for the health of a discipline, e.g., in decreasing confirmation bias (Cruz and Smedt, 2013), which presumably promotes progress in the long term. With that said, the capacity of disagreement to causally impede progress might explain why there is more progress in the 'hard' sciences than in philosophy (if that is indeed the case). For if there is generally less disagreement among 'hard' scientists than among philosophers, then the latter may be more frequently able to collectively move on from one question to the next in virtue of having answered the previous question in an agreed-upon way.

### 4.3. Conclusion

In sum, then, we arrive at the somewhat delicate position that although disagreement need not be incompatible with progress, it can causally impede progress, and can undermine our ability to tell which developments are progressive (and to what degree). Although this might seem to concede a lot to a form of (epistemic) pessimism, we want to emphasize that reasons to be sceptical that we can tell which developments in philosophy are progressive are less pernicious than reasons to be sceptical that progress is ever made at all. For if philosophy makes no progress, then to continue doing philosophical research would surely be a waste of our time and resources. By contrast, if it's merely hard to tell when progress has been made in the face of persistent disagreement, and yet there is no reason to think it has not or cannot

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<sup>34</sup>Niiniluoto (1984, 2019) draws upon the notion of *estimated progress* to render this issue more tractable.

<sup>35</sup>Along similar lines, Chu and Evans (2021) argue that a large volume of published work within a discipline can causally impede progress via the ossification of a small canon of highly cited central works making it more difficult for promising new ideas to attract attention.

be made at all, then that is not a compelling reason for philosophers to give up altogether on trying to make progress. Disagreement calls for humility, not despair.

## Acknowledgements

We are grateful for insightful feedback from audiences at Uppsala University, Inland Norway University of Applied Sciences, National Taiwan University, and the conference *Agreement and Disagreement Beyond Ethics and Epistemology* at Kent University. We also thank anonymous readers for this journal. Research for this paper was funded by the Icelandic Centre for Research (grant number: 195617-051).

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