

Who's Afraid of Cognitive Diversity?

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Abstract

The Challenge from Cognitive Diversity (CCD) states that demography-specific intuitions are unsuited to play evidential roles in philosophy. The CCD attracted much attention in recent years, in great part due to the launch of an international research effort to test for demographic variation in philosophical intuitions. In the wake of these international studies, the CCD may prove revolutionary. For, if these studies uncover demographic differences in intuitions, then, in line with the CCD, there would be good reason to challenge philosophical views that rely on those intuitions for evidential support. I argue that philosophical views that rely on demography-specific intuitions for evidential support need not be threatened by such findings. I first provide a detailed analysis of the epistemological principles driving the CCD and distinguish three formulations of this challenge. I then show that there are good reasons to reject all such formulations of the CCD.

Keywords: Intuitions, Experimental Philosophy, Cognitive Diversity, Philosophical Methodology, Peer Disagreement

1. Introduction

The recent launch of an international research effort to test for demographic variation in philosophical intuitions marks a significant development in experimental philosophy.¹ This research effort is not due to simple anthropological curiosity. For, as some have argued, if intuitions are found to be demography-specific, then they are thereby unsuited to play evidential roles in philosophy. Call this the Challenge from Cognitive Diversity (CCD). In the wake of a number of international studies testing for demographic differences in people's intuitions, the CCD may prove revolutionary. After all, many firmly-held philosophical views rely on intuitions for evidential support.² And if evidence shows that those intuitions are demography-specific, then, in line with the CCD, there would be good reason to question such views.

In this paper, I argue that a careful analysis of the epistemological considerations driving the CCD give us good reason to reject it, and that philosophical views found to rely on demography-specific intuitions need not be threatened by such findings. To develop this proposal, I first explain the CCD in more detail (sec. 2) and then give a brief overview of recent arguments by Edouard Machery (2017), which offer perhaps the most careful defence of the motivations for this challenge (sec. 3). Focusing on Machery's arguments proves instructive as this allows us to tease apart three formulations of the CCD. In subsequent sections, I demonstrate that there are good reasons to reject all such formulations (secs. 4 & 5).

¹ For details, see the 'Geography of Philosophy' research project.

² Cappelen (2012) and Deutsch (2015) deny this. However, see Egler (2020) for a reply.

Before proceeding, two preliminary points. First, for the purposes of this paper I will use the term 'intuition' to refer to a *judgement* about what is the correct verdict to a philosophical thought-experiment (or philosophical case).³ There are of course many bells and whistles one can add to an account of intuitions.⁴ However, for current purposes these qualifications will not prove important. Second, my use of the notion 'cognitive diversity' refers specifically to cases in which people's intuitions vary with respect to demographic factors -- such as their culture, socio-economic status, and gender. This differs in important ways from the notion of 'cognitive diversity' popularised by Stephen Stich (1988), which refers more broadly to cases in which people's *cognitive processes* differ as a result of influences from environmental variables. On Stich's conception, 'cognitive diversity' *may* refer to instances in which people's intuitions vary with respect to demographic factors; but it also refers to variation in cognitive processes unrelated to intuitions, as a result of influences from environmental variables that are not correlated to demographic variables. Moreover, the notion of 'cognitive diversity' adopted here differs from the psychological notion of *individual differences* (see, e.g., Stanovich and West, 2000). The latter refers to personal-level factors such as intelligence and working memory capacity, which can give rise to differences in people's responses to cognitive tasks. I set aside such personal-level factors and focus entirely on differences in intuitions correlated with *demographic* variables. With these considerations in mind, let us now turn to the methodological challenge I will be examining in this paper.

2. The Challenge from Cognitive Diversity

To begin, consider the following case:

Unwavering: An essential part of a philosopher S's argument for her preferred epistemological thesis is that many of her interlocutors share her intuition (i.e., her judgement) about what is the correct verdict to a prominent philosophical case T. However, empirical findings show that people from different cultures tend to have a *diverging* intuition with respect to T; moreover, it is clear that their intuition supports a rival epistemological thesis. S acknowledges this set of diverging intuitions; yet, she claims that because her intuition is *self-evidently* correct, and that other people from her cultural group agree, then there is good reason to favour her thesis.

Most people agree that something is amiss with S's appeal to her intuitive judgement about T in support of her thesis. After all, whether one finds S's intuition to be *self-evidently* correct seems to depend on whether one belongs to her cultural group. But it is not clear why belonging to S's culture puts one in a privileged epistemic position to judge on philosophical matters. And so, to the extent that features of S's demography appear to determine whether she finds her intuition to be *self-evidently* correct, her intuition fails to lend support to her preferred thesis.

Some have argued that this verdict about *Unwavering* applies to other instances in which intuitions vary along demographic lines. The following passages are representative of this line of thought:

³ I will use the notions of 'philosophical thought-experiment' and 'philosophical case' interchangeably in what follows. However, not much hangs on this choice.

⁴ For a review, see Pust (2017, sec.1).

The fact that epistemic intuitions vary systematically with culture and [socio-economic status] indicates that these intuitions are caused (in part) by culturally local phenomena. And there is no reason to think that the culturally local phenomena that cause our intuitions track the truth any better than the culturally local phenomena that cause intuitions that differ from ours.
(Nichols et al., 2003, p.234)

Intuitions track more than just the philosophically-relevant content of the thought-experiments; they track factors that are irrelevant to the issues the thought-experiments attempt to address. The particular socio-economic status and cultural background of a person who considers a thought-experiment should be irrelevant to whether or not that thought-experiment presents a case of knowledge. Such sensitivity to irrelevant factors undermines intuitions' status as evidence.
(Swain et al., 2008, pp.140–141)

If I find out that my philosophical intuitions are a product of my cultural upbringing, then, since it's in some sense an accident that I had the cultural upbringing that I did, I am forced to wonder whether my intuitions are superior at tracking the nature of the world, the mind, and the good.
(Knobe and Nichols, 2008, p.11)

[T]he finding of cultural or individual differences in philosophical intuition makes the assumption that "our" intuitions are very likely to be true more than a bit problematic
(Stich and Tobia, 2016, p.13)

The common idea running through these passages is that it is epistemically questionable to favour the intuitions of any particular demographic group. Building on these and other similar kinds of considerations, some have argued that from the observation that intuitions vary along demographic lines, we can infer that they are thereby unsuited to play evidential roles in philosophy (for reviews: Alexander and Weinberg, 2007; Stich and Tobia, 2016). I have denominated this the Challenge from Cognitive Diversity (CCD).

The CCD has attracted much attention in recent years, in great part due to a host of surprising empirical findings suggesting that philosophical intuitions vary along demographic lines. One prominent example comes from studies reporting cross-cultural variation in intuitions about versions of Kripke's famous Gödel case (for a review: Dongen et al., 2020). These studies suggest that while Westerners tend to issue a causal-historical intuition to these cases, East Asians tend to have descriptivist intuitions instead. Another example is a recent study reporting similar patterns of cross-cultural variation in intuitions about Frankfurt cases -- a class of thought-experiments which purport to show that agents can be morally responsible for their actions, even if they did not have the ability to do otherwise (Hannikainen et al., 2019). The study in question provides evidence that, when compared to East Asians, Westerners are much more likely to judge subjects in these cases as having control and as being blameworthy for their actions. And additional studies have found patterns of demographic variation in a host of other intuitions as well.⁵

The intuitions examined in many of these studies have famously played central evidential roles in philosophical arguments. For example, intuitions about Gödel-style cases have traditionally been taken as evidence against descriptivist theories of

⁵ For a more comprehensive list of studies, see Machery (2017 ch. 2)

reference and in favour of the opposing causal-historical view. And similarly, intuitions about Frankfurt cases are often invoked as evidence for or against positions within thorny debates about the nature of free will. However, if the above findings of cross-cultural variation are correct, then, in line with the CCD, reliance on these demography-specific intuitions in evidential roles is ultimately unwarranted (see, e.g., Machery et al., 2004; Hannikainen et al., 2019). These claims thus suggest that philosophical debates about semantic reference and free will stand in need of significant revisions in order to eliminate appeals to those intuitions as evidence for the different positions on these issues.

Some have argued that these local restrictions on the use of intuitions raise significant concerns about the methodology of philosophy (for reviews: Alexander and Weinberg, 2007; Stich and Tobia, 2016; Machery, 2017). Proponents of this 'restrictionist project' claim that the methodology of philosophy relies heavily on appeal to intuitions in evidential roles. Moreover, they contend that since some intuitions have been found to vary with respect to epistemically irrelevant factors (such as demographic variables), then other yet untested intuitions might also be prone to such worrying patterns of variation. On this note, they maintain that it would be methodologically prudent to reorient philosophical inquiry away from relying so heavily on intuitions as evidence -- at least until we have a better understanding of the extent to which they are prone to such distorting effects.⁶

The above considerations accentuate the potentially radical implications of upcoming international studies testing for demographic variation in intuitions. For, if these studies discover demographic differences in *other* important philosophical intuitions, then this would substantiate the aforementioned concerns about the methodology of philosophy. This underscores the urgency of conducting a careful examination of the merits and shortcomings of the CCD in order to better assess the real import of findings from the upcoming international studies. This will be the aim in the subsequent sections. As a first step to carrying out such an examination, in the next section I tease apart two importantly different approaches for motivating the CCD.

3. A Closer Look at the CCD

Concerns about the use of demography-specific intuitions as evidence in philosophy are typically motivated by two (non-mutually exclusive) approaches. The first of these seeks to establish that it would be question-begging to rely on demography-specific intuitions in evidential roles. The second develops instead the claim that intuitions (in general) are epistemically deficient. Machery (2017) has recently offered what is perhaps the most detailed and robust defence of both these approaches. His arguments are a good point of departure for an examination of the CCD as they helpfully pinpoint the epistemic considerations driving this challenge. Focusing on these arguments will allow us to distinguish three formulations of the CCD -- which I assess in turn in subsequent sections.

Two important considerations about the discussion that follows. First, it is noteworthy that Machery explicitly avoids using the term 'intuition', opting instead to frame his arguments in terms of 'judgments about philosophical cases'. However, as mentioned in the outset (sec. 1), I use 'intuition' to refer to precisely these kinds of judgments. And so, I will use 'intuition' and 'judgment about philosophical cases' interchangeably in what

⁶ An important debate among restrictionists is whether further investigation will rehabilitate the evidentiary status of intuitions (see Machery, 2017, pp.7–8).

follows. Second, Machery aptly distinguishes between material and formal uses of philosophical cases. Material uses aim to improve our understanding of the referent of a philosophically-relevant concept or notion. We have already discussed examples of material uses in the previous section: both the use of Gödel cases to explore the nature of semantic reference and the use of Frankfurt cases to discover the nature of free will configure material uses of philosophical cases. Formal uses, on the other hand, aim to investigate the content of philosophically-relevant concepts. For the sake of simplicity, I focus only on formulations of the CCD that attack *material* uses of philosophical cases.⁷

CCD and Dogmatism

The claim that it would be question-begging to rely on demography-specific intuitions in evidential roles has proven enormously influential in debates about the methodology of philosophy. And although many versions of this view are plausible in their own right,⁸ Machery (2017 ch. 4.1) helpfully draws on lessons and insights from debates about the epistemology of peer disagreement to develop this view in more detail. His argument starts by pointing out that a common position in debates about peer disagreement is that in at least *some cases*, epistemic peers ought to suspend judgments on a matter they dispute (Machery, 2017, p.135). The cases in question are ones in which there is no reason to think that any of the peers is in a privileged epistemic standing on that matter, and neither is there a clear-cut method to adjudicate on the dispute at issue. Machery contends that disagreements about philosophical cases are structurally similar to such cases of peer disagreement -- as there is presumably no good reason to think that any group of people is in a privileged epistemic position to judge on philosophical matters, and neither are there adequate resources to adjudicate between competing intuitions (Machery, 2017, pp.130–136). Thus, he proposes that one ought to suspend judgment about a given philosophical case if it is found to elicit disagreement.

Furthermore, Machery argues that since most intuitions studied so far elicit disagreements (e.g., between different demographic groups), then we should expect other intuitions to also elicit disagreements. Moreover, he indicates that the kinds of epistemic concerns arising for cases of peer disagreement extend to these merely *potential* cases of disagreements in judgments about philosophical cases (Machery, 2017, pp.127–130). In this sense, he argues as follows (Machery, 2017, p.127):

Dogmatism

1. Most of the philosophical cases examined by experimental philosophers elicit disagreement.
2. This disagreement takes place among epistemic peers.
3. If most of the philosophical cases examined by experimental philosophers elicit disagreement among peers, then most philosophical cases would plausibly elicit disagreement among peers.
4. If epistemic peers are likely to disagree about a philosophical case, they ought to suspend judgment about it.
5. Hence, except for those philosophical cases known not to elicit disagreement among peers, philosophers ought to suspend judgment about the situations described by philosophical cases

⁷ Although I do not have space to develop this here, the arguments in this paper apply, *mutatis mutandis*, to formulations of the CCD in terms of arguments against *formal* uses of philosophical cases.

⁸ See, for example, Stich (1988).

Note that Dogmatism articulates a version of the CCD. For, as Machery suggests, we should regard cases of cognitive diversity as instances of peer disagreement. And so, evidence of cognitive diversity in judgments about a given philosophical case motivates suspension of such judgments. Now consider: if philosophers ought to suspend a judgment about a philosophical case, then it is hard to see what justifies appealing to it as evidence for philosophical claims. Thus, Dogmatism infers from evidence that intuitions vary along demographic lines to the conclusion that they are unsuited to play evidential roles. However, it is noteworthy that Dogmatism conflates distinct ways of motivating this conclusion. As we will see below, teasing these apart proves important for an adequate assessment of the CCD.

A central insight from research on cases of peer disagreement is that they can motivate suspension of judgment for two distinct reasons (Schoenfield, 2014; Christensen, 2016). The first is that learning about the disagreement raises the hypothesis that the judgments are irrational; the second is that this raises the hypothesis that the judgments are false. Typically, these hypotheses are run together. But note that in at least some cases, these two dimensions of evaluation can come apart. (For example, one could attempt to solve math problems by just guessing the answer, which is an irrational method, but which can sometimes deliver the right result.)

These considerations help give a plausible diagnosis of why cases of cognitive diversity can motivate suspension of judgment in the way Machery suggests. First, learning of such disagreements raises the hypothesis that one's intuition is likely to be irrational.⁹ After all, demographic factors are presumably epistemically irrelevant with respect to philosophical truths. Thus, learning of the influence of demographic factors suggests that one's intuitions may not be adequately responsive to the available evidence on the matter under dispute. And note that this threat of irrationality persists *even if* the intuition is veridical -- as one could have just been lucky to have belonged to the demographic group with the correct intuitions without ever having considered one's reasons for them. Furthermore, evidence of cognitive diversity raises the hypothesis that one's intuition is likely to be false. After all, it is implausible that two demographic groups which disagree in their judgments about philosophical matters can both be right. Therefore, learning about the disagreement with another demographic group suggests that one's intuition has a roughly even chance of being correct or incorrect.

This shows that there are two ways of motivating premise 4 of Dogmatism. The first is driven by the idea that evidence of cognitive diversity raises the hypothesis that one's intuition is likely to be irrational. This would in turn motivate suspension of judgment -- as, presumably, one should suspend judgment when this is likely to be irrational. Assuming that Machery is right that concerns arising for cases of peer disagreement extend to merely *potential* cases of disagreement in judgments about philosophical cases, we arrive at the following way of motivating premise 4:

Irrationality

- 4a. If epistemic peers disagree about a philosophical case, their judgments are likely to be irrational.
- 4b. One ought to suspend judgment if it is likely to be irrational.
- 4c. Epistemic concerns arising for confirmed cases of peer disagreement arise also for *potential* disagreements in judgments about philosophical cases.

⁹ Although some have denied that intuitions can be evaluated along the dimension of epistemic rationality (e.g., Koksvik, Forthcoming ch.2).

4. If epistemic peers are likely to disagree about a philosophical case, they ought to suspend judgment about it.

The second way of motivating premise 4 is driven, instead, by the threat of falsity:

Falsity

4a. If epistemic peers disagree about a philosophical case, their judgments are likely to be false.

4b. One ought to suspend judgment if it is likely to be false.

4c. Epistemic concerns arising for confirmed cases of peer disagreement arise also for *potential* disagreements in judgments about philosophical cases.

4. If epistemic peers are likely to disagree about a philosophical case, they ought to suspend judgment about it.

Differentiating Falsity and Irrationality show how Dogmatism articulates two distinct versions of the CCD. If this argument is fleshed out in terms of Irrationality, then demography-specific intuitions are unsuited to play evidential roles because they are likely to be irrational. If fleshed out in terms of Falsity, intuitions are so unsuited because they are likely to be false.

CCD and Unreliability

Another way to motivate concerns about use of demography-specific intuitions in philosophy is to claim that intuitions (in general) are epistemically deficient. On some prominent formulations of this view, this is because intuitions are hopeless (Weinberg, 2007), problematically sensitive (Alexander and Weinberg, 2014), or because they are difficult to calibrate (Cummins, 1998). Despite the influence of these proposals in recent years, many have pointed out that requiring epistemic sources to be well-calibrated, hopeful, or adequately sensitive impugns epistemic sources that are generally considered to be sound (see, e.g., Weinberg et al., 2012; Brown, 2013; Machery, 2017, p.104). In light of these and other similar kinds of critiques, Machery argues for the alternative claim that intuitions are epistemically deficient because they are unreliable (Machery, 2017, pp.102–105). Machery's argument focuses on the notion of *aggregate* reliability (Machery, 2017, p.104). On this dimension of evaluation, reliability is determined (roughly) as a function of the likelihood that an intuition chosen at random is correct. Machery's proposal is that intuitions are unreliable in this sense, as demonstrated by two extant bodies of empirical findings. The first are findings of cognitive diversity, which suggest that large demographic groups have diverging intuitions; and the second are findings of presentational effects, which suggest that people's intuitions vary depending on how thought-experiments are presented to them -- such as their order, or superficial changes in the wording.¹⁰ Machery's suggestion is that these findings demonstrate that for any given thought-experiment, roughly half of all people will have one intuition, whereas the other half will have another (Machery, 2017, p.105). And assuming that two diverging intuitions cannot both be correct, then for any intuition chosen at random, it will have a roughly even chance of being either correct or incorrect -- thus making it unreliable.

Furthermore, Machery argues that since most intuitions studied to date have been prone to large demographic and/or presentational effects, then we should expect other

¹⁰ For a review of the empirical evidence, see Machery (2017 ch. 2)

intuitions to also vary depending on such factors -- and to thus also be unreliable. In this sense, he argues as follows (Machery, 2017, pp.102–103):

Unreliability

1. Unreliable judgments are severely deficient from an epistemic point of view.
2. Judgments elicited by most of the philosophical cases that have been examined by experimental philosophers are unreliable.
3. If the judgments elicited by most of the philosophical cases that have been examined by experimental philosophers are unreliable, then the judgments elicited by most philosophical cases are plausibly unreliable.
4. We ought to refrain from making a judgment of a particular kind K (i.e., we ought to suspend judgment of kind K) when most judgments of this kind are plausibly severely deficient from an epistemic point of view, except when this judgment is known to be an exception.
5. Hence, except when a philosophical case is known to elicit a reliable judgment, philosophers ought to suspend judgment about the situations described by philosophical cases.

Unreliability also articulates a version of the CCD. As discussed above, the main justification for premise 2 is the claim that an intuition is unreliable provided that it is prone to either large demographic or presentational effects. This entails that evidence of large demographic effects suffices to show an intuition to be unreliable. Moreover, according to premise 1, such demography-specific intuitions are severely deficient from an epistemic point of view. And, in line with premise 4, this means we should refrain from making judgements about philosophical cases when these are prone to such large demographic effects. Now, if philosophers should refrain from making demography-specific judgments about philosophical cases in the first place, then it is hard to see what justifies their use as evidence in philosophy. Thus, when taken together, premises 1, 2 and 4 of Unreliability formulate a version of the CCD that is driven by the claim that intuitions prone to large demographic effects are unreliable.

Summing up

To take stock, I have given a brief overview of Machery's arguments for the two most prominent approaches for motivating methodological concerns about the use of demography-specific intuitions in evidential roles. I then showed how these arguments allow us to distinguish three versions of the CCD. The first builds on the idea that demography-specific intuitions are likely to be irrational, whereas the second is driven by the claim that demography-specific intuitions are likely to be false. The third version of the CCD relies instead on the idea that evidence of large demographic effects on intuitions shows them to be unreliable.

In the subsequent sections, I provide reasons to reject all such formulations of the CCD. My arguments will seek to establish that, in at least some cases, even if intuitions are found to vary along demographic lines (and even if the demographic effects are large) this still fails to raise worries that they are irrational, false, or unreliable. As a first step to establishing this proposal, in the next section I argue against the claim that evidence of demographic variation suffices to show that intuitions are likely to be irrational.

Before proceeding, one important caveat. I will assume here that people from different demographic groups are epistemic peers with respect to philosophical matters. Now, many have contested this claim (e.g., Grundmann, 2013). However, for the sake of argument, I will dismiss such considerations here.

4. Against Irrationality

In this section, I argue against the first premise of Irrationality -- i.e., the claim that if epistemic peers disagree about a philosophical case, then their judgments are likely to be irrational. I first briefly rehearse the motivations for the view known as 'permissivism', according to which a body of evidence can rationalise more than one doxastic attitude. I then pose a dilemma for proponents of Irrationality: they must either deny permissivism, or establish that no case of cognitive diversity is permissive. As we will see, the first option is untenable and the second option is false (as there is good reason to think that at least some instances of cognitive diversity are indeed permissive).

Permissivism

As already mentioned, permissivism states that a body of evidence can rationalise more than one doxastic attitude. Permissivists often seek to motivate this view by appealing to cases. For instance, Gideon Rosen offers the following example:

Palaeontologists disagree about what killed the dinosaurs. And while it is possible that most of the parties to this dispute are irrational, this need not be the case. To the contrary, it would appear to be a fact of epistemic life that a careful review of the evidence does not guarantee consensus even among thoughtful and otherwise rational investigators.
(Rosen, 2001, p.71)

Permissivists take other examples of disagreements in the sciences, law, and philosophy to motivate a similar conclusion: people can rationally hold diverging positions about what a body of evidence supports. For a further illustration, consider the thorny debates between David Lewis and Robert Stalnaker (and between their respective students) on the notion of a 'possible world'. Even though Stalnaker and Lewis disagree, it is still plausible to think that *both* are rational in their respective positions on this issue.

To buttress this proposal, permissivists argue that what is rational to believe depends in great part on what *methods* are used to analyse the available evidence (see, e.g., Douven, 2009; Titelbaum and Kopec, 2019). Such methods are distinguished (at least in part) by how they balance certain theoretical virtues against each other -- things like explanatory power, coherence, fruitfulness, and simplicity. So a method that favours the virtue of simplicity over that of coherence will thus differ from one which prioritises coherence over all other virtues. Now, given that distinct weightings of such theoretical virtues can be equally rational, then there can be distinct yet equally rational methods for analysing a body of evidence.

These considerations help to clarify why the cases discussed above are plausibly permissive. For example, consider two of the major theories in debates about what killed the dinosaurs: (i) the impact theory -- according to which this is explained by the impact of an asteroid on Earth -- and (ii) the volcanic theory -- which explains this event as resulting from an increase in volcanic activity at the time. These theories differ, in part, because they favour distinct theoretical virtues (see, e.g., Officer and Page, 1996 Afterword). Proponents of the volcanic theory claim that their view is explanatorily powerful, insofar as it accommodates for a large number of disparate geological findings. Proponents of the impact theory, on the other hand, claim that their view is to be preferred, in part because it is much more simple (see, e.g., Officer and Page, 1996 Afterword). Now, since methods that favour simplicity over explanatory power, or *vice-versa*, can both be regarded as rational, then proponents of these different theories are

presumably rational in their respective views -- even if they deliver different outcomes. Similarly, we can potentially explain the disagreements between Stalnaker and Lewis regarding the notion of 'possible worlds' as originating from differences on which theoretical virtues they consider more desirable -- e.g., with Lewis favouring coherence more than what is commonsensical when compared to Stalnaker. Given the methods each of them employs is equally rational, then their respective positions are presumably rational as well.

Permissivism in Cognitive Diversity

So far I have rehearsed reasons for thinking people can sometimes be rational in their diverging positions about some matter under dispute. How about cases in which people from distinct demographic groups have opposite intuitions about a philosophical thought-experiment? Could those disagreements also be permissive? If so, this would pose a challenge for the first premise of Irrationality -- i.e., the claim that if epistemic peers disagree about a philosophical case, their judgments are likely to be irrational. After all, if people from different demographic groups who are indeed epistemic peers have diverging intuitions, and if they are all rational in their respective intuitions, there is no reason to think of their intuitions as irrational. I can see two lines of response available to a proponent of Irrationality here:

- (1) Deny permissivism outright -- i.e., to defend the position commonly known as 'Uniqueness'; *or*
- (2) Accept that there are permissive cases, but contend that the cases of demographic variation in intuitions about thought-experiments do not admit of more than one rational doxastic attitude.

Consider the first option. Denying there could be *any* permissive cases precludes the possibility of permissive disagreements in philosophy (including those uncovered by evidence of cognitive diversity). This then undercuts the challenge to Irrationality from permissivism.

I contend that proponents of Irrationality should reject this first option. Uniqueness is highly controversial insofar as it forces us to conceive of evidential support in terms of a two-place epistemic relation, which takes a body of evidence E as one of the relata and a proposition p as the other (see, e.g., Kelly, 2013; Titelbaum and Kopec, 2019). On this view, to evaluate whether E evidentially supports p , we need only define E and p -- nothing else needs to be factored in. But, as many have taken pains to show, conceiving of facts of evidential support in terms of this two-place relation is simply untenable (Douven, 2009; Kelly, 2013; Titelbaum and Kopec, 2019). The problem is familiar from debates about the shortcomings of objective (or formal) confirmation theories (which claim that the bearing of evidence on a belief is completely independent of any subjective elements). Two prominent examples of such views are Carnap's system of "inductive logic" and Hempel's positive instance account for defining confirmation relations in exclusively logical terms. Carnap's system famously failed because it could not specify non-arbitrary ways to assign unique logical probabilities to hypotheses, and neither could it disqualify absurd probability assignments. And Hempel's view failed to capture some even trivial cases like theoretical hypothesis, as well as other more tricky cases such as Goodman's case of "grue" and the ravens paradox. As some have pointed out, many of these problems also arise for Uniqueness. For example, Titelbaum (2010) demonstrates that the challenge posed by Goodman's "grue" case generalises for any

view that conceives of evidential support in the way that Uniqueness does. And Schoenfield (2014, pp.197–198) points out that such views fail to specify a non-arbitrary and non-mysterious way of specifying degrees of evidential support. Delving into the finer details of these proposals is outside the scope of this paper. However, these considerations suffice to show that tying up Irrationality to Uniqueness would make this argument prone to such forceful objections -- causing it to significantly lose its bite.

The second option is far more promising. Even if we admit some disagreements are permissive, this does not entail that *every* case of peer disagreement is permissive. And, plausibly, those disagreements uncovered by findings of cognitive diversity belong to the class of non-permissive ones. For, unlike the disagreements between the Palaeontologists or the expert philosophers, which turn on parties having distinct yet equally rational methods, divergences uncovered by cases of cognitive diversity seem to turn on *nothing more* than features of the demography of the disagreeing parties.

Although seemingly plausible, this line of reply fails. Even if we can trace disagreements between peers to demographic factors, this need not indicate irrationality on the part of those involved in the dispute. As we will see, some such cases of disagreement along demographic lines resemble the permissive cases of peer disagreement detailed above insofar as they can be explained as the result of parties (inadvertently) adopting distinct yet equally *rational* methods to analyse a body of evidence.

As a first step to developing this claim, consider the challenge posed by the so-called *threshold problem* for knowledge -- i.e., the question of how strong a subject's epistemic position must be for them to be ascribed knowledge. As many have suggested, solutions to the threshold problem can be thought in terms of a trade-off between two opposing epistemic imperatives: first, the imperative of error-avoidance, and second, that of learning truths (Foley, 1992). On this view, if the threshold of knowledge is set very high, then agents must be in a strong epistemic position to be attributed knowledge. We can think of this as a case in which the imperative of error-avoidance is prioritised over that of learning truths. By contrast, solutions that require agents to be in a weaker epistemic position to be attributed knowledge will prioritise the imperative of learning truths over that of avoiding error.

Framing the threshold problem in this way helps elucidate how distinct communities could set different thresholds for knowledge yet still be rational. For example, consider a community C1 that is overall very risk-averse as a result of living in a very hostile environment (where conditions are dire, resources are scarce, and mistakes can easily lead to substantial harms). Accordingly, members of C1 perceive the cost of acquiring false beliefs to be very high. And so they strongly prioritise the epistemic imperative of error-avoidance *over* that of learning truths. We can thus expect members of C1 to set the threshold for knowledge somewhat high. Now consider a community C2 living in more agreeable environmental conditions. As a function of their favourable conditions, members of C2 prioritise the imperative of learning truths *over* that of error-avoidance. Thus, they perceive the cost of acquiring false beliefs as rather low, and are comfortable taking risks (to, e.g., explore their surroundings). Members of C2 then set a lower threshold for knowledge (when compared to C1), attributing knowledge to subjects who stand in weaker epistemic positions.

Given the scenario described above, it is safe to assume that members of C1 and C2 will sometimes diverge in their knowledge attributions -- even in response to philosophical

thought-experiments. For instance, suppose members of each community considered the following case:

Case A: While preparing lunch, Stefano grabs a tin of chickpeas from the cupboard. He looks at the tin and asserts: "I know there are chickpeas in this tin."

Case B: While preparing lunch, Stefano grabs a tin of chickpeas from the cupboard. He looks at the tin and wonders whether it is possible that foreign spies could have broken into his home in the night and substituted its contents with small stones that weigh just as much as chickpeas. Stefano considers this possibility and asserts: "I know there are chickpeas in this tin."

Suppose the more risk-tolerant members of C2 have the intuition that Stefano speaks truly in both cases. They agree that in both A and B Stefano does know there are chickpeas in the tin. However, the highly risk-averse members of C1 could disagree. Because of their extreme sensitivity to possibilities of error, they could have the intuition that Stefano does not know that there are chickpeas in the tin after raising the consideration that foreign spies could have substituted the contents of the tin with stones. Now, note that if such divergences in intuitions arise, they will be due to influences of demographic factors. After all, these intuitions will differ at least in part as a function of the different threshold for knowledge set by each community.

Now, according to the first premise of Irrationality, if the divergence in intuitive knowledge attributions we find between members of C1 and C2 is a case of cognitive diversity, then it should immediately raise the hypothesis that their intuitions are likely to be irrational. However, I propose that we should resist this verdict as, plausibly, members of C1 and C2 would be *rational* in their respective (differing) intuitions about knowledge. After all, each community's trade-off between the badness of acquiring bad beliefs in opposition to the relative advantage of coming to hold true beliefs is adequately responsive to the kinds of constraints imposed by each of their environments. And in this sense, we can regard their respective *methods* for evaluating knowledge attributions -- that is, the function they apply to draw conclusions about knowledge attributions from a given body of evidence -- to be equally rational. The divergences in intuitive knowledge attributions between members of C1 and C2 therefore resemble the kind of permissive cases of peer disagreement between Palaeontologists and expert philosophers.

There is an objection in the offing that is worth addressing here. Wouldn't learning of the dispute suffice to raise doubts about the methods themselves? Maybe members of C2 should re-evaluate how they set the threshold for knowledge after discovering that members from C1 have such a lower threshold. Likewise, maybe members of C1 should reconsider their own threshold for knowledge once learning of the differing standards endorsed by members of C2.

The above objection is a serious one. My response to it is, however, simple: as this objection poses a challenge for permissivism *in general*, I see no way of pressing it without being committed to Uniqueness. To clarify, note how the above challenge can be raised for *any* case peer disagreement whatsoever. On the above line of reply, the *mere* fact of the disagreement between two subjects S1 and S2 on some undefined matter suffices to raise the threat of irrationality about the methods each of them employs. If this is correct, peer disagreement will *never* be permissive. Otherwise put, pressing this challenge would commit one to Uniqueness (or at least some version of this view). As I have given reasons to think this option is unattractive, I suggest this line of reply is problematic.

At this point, it is important to pause and clarify the dialectical purpose of the discussion in this section. Importantly, I am not defending that *every* case of cognitive diversity is thus permissive; rather, I only indicate in which ways they can be considered permissive. In the remainder of this section, I show how these considerations are suggestive for thinking that some prominent cases of cognitive diversity are plausibly permissive.

As already discussed, a prominent set of empirical findings suggest that while Westerners have causal-historical intuitions about Gödel-style cases, East Asians have descriptivist intuitions instead (see Dongen et al., 2020). One plausible explanation for this divergence is that East Asians and Westerners employ different reference-fixing strategies to make judgments about the referent in this case. Thus, whereas East Asians judge that 'Gödel' refers to whoever best satisfies a particular description D (or clusters of descriptions) associated with this name, Westerners judge that 'Gödel' refers to whoever was given that name in some initial 'baptism'. Now, is there reason to think that adopting either of these reference-fixing strategies is *irrational*? This is questionable. One reason for thinking as much comes from recent evidence suggesting that people will rely on *both* causal-historical and descriptivist strategies to make judgments about semantic reference -- choosing one or another depending on which term is being analysed (Nichols et al., 2016). And, as Nichols et al. (2016, pp.160–162) suggest, it would be implausible to take this variation in the use of such strategies as indication of irrationality on the part of speaker/hearers. Instead, it seems plausible that using either of these different strategies is appropriate as they both deliver correct results (depending on the term being analysed). This then suggests that both these strategies are *rational* methods for determining semantic reference. Thus, although East Asians and Westerners may make use of different reference-fixing strategies to attribute meaning in Gödel cases, both such strategies can be considered to be rational -- and that the disagreement in question is plausibly permissive.¹¹

For another illustration of a plausibly permissive case of cognitive diversity, consider the findings that Westerners are more likely than East Asians to judge that the subject of a Frankfurt case is blameworthy for their actions (Hannikainen et al., 2019). As the authors of this study suggest, one plausible explanation for this variation is that East Asians and Westerners tend to adopt different strategies to explain human behaviour. Whereas East Asians often rely on situationist explanations -- which emphasises how social roles, obligations, and other features of a person's situation -- Westerners rely instead on dispositionist explanations -- which focus instead on people's internal characteristics, such as their desires and personality. Now, is there reason to think that adopting either of these strategies to explain human behaviour is *irrational*? This also seems questionable. After all, both approaches can presumably deliver plausible interpretations of human behaviour, as it seems clear that situationist and dispositionist factors can bear on our actions. So, although focusing more on one or another of these factors can deliver different results, it is unclear why this is evidence that adopting one or another of these strategies is *irrational*.¹² In this sense, the disagreement found in

¹¹ It is of course possible that one or another of these strategies may actually deliver the *wrong* result in the Gödel case. Even so, both such strategies are still plausibly rational -- since even rational methods can (on occasion) lead to the formation of false beliefs.

¹² This is not to say that dispositionist and situationist strategies *always* deliver apt explanations of human behaviour. Indeed, reliance on some such strategies can lead to errors under certain circumstances (for a review Malle, 2006). However, it's unclear why such errors should be taken as indication that either such strategies are thereby *wholly* irrational.

intuitions of East Asians and Westerners about Frankfurt cases can presumably be traced back to distinct, but similarly rational methods for analysing human behaviour. As such, the dispute at issue is plausibly a permissive one.

In sum, the arguments in this section show that evidence of cognitive diversity cannot *itself* raise the threat of irrationality about diverging intuitions. In this way, the above examples give us reasons to resist the first premise of Irrationality -- i.e., the claim that if epistemic peers disagree about a philosophical case, their judgments are likely to be irrational. As such, there is good reason to reject versions of the CCD that rely on Irrationality.

5. Against Falsity and Unreliability

In this section, I begin by arguing against the first premise of Falsity -- i.e., the claim that if epistemic peers disagree about a philosophical case, then their judgments are likely to be false. I show how recent findings from the burgeoning Sources Project in experimental philosophy give us reason to reject this claim insofar as they provide resources to adjudicate between demography-specific intuitions. I then build on these considerations to argue against yet another formulation of the CCD: namely, that which relies on the claim that intuitions prone to large demographic effects are unreliable.

On Falsity

The Sources Project in experimental philosophy aims to provide psychological explanations of intuitions that can help assess their epistemic standing (Pust, 2017). For the most part, studies in the Sources Project develop this approach by first tracing intuitions back to particular psychological processes. They then examine under which circumstances these processes are trustworthy, and when they can lead judgments astray.¹³ Findings from this research programme are instructive insofar as they allow philosophers to make better informed assessments of when they can rely on their intuitions and when they should refrain from doing so. Notably, a set of studies in the Sources Project has examined intuitions at the centre of recent debates about the CCD. And, as we will see below, their findings prove relevant to evaluate Falsity.

As a first example, consider the recent study by Izumi et al. (2018) on intuitions about Kripke's Gödel-style cases. These cases ask people to evaluate whether the name 'Gödel' -- as used in a given scenario -- refers to either: (a) the person who really discovered the incompleteness of arithmetic; or (b) the person who stole the proof and claimed credit for the work. Izumi and colleagues point out the many difficulties in providing a non-ambiguous translation of (a) and (b) into East Asian languages. The problem is that both these options use the definite article 'the' to pick out a *specific* person mentioned in the relevant scenario. However, East Asian languages (e.g., Japanese and Cantonese) lack a definite article that plays this syntactic role. For this precise reason, versions of the Gödel case used in experimental studies tend to translate both (a) and (b) as bare noun phrases that omit the definite article 'the' (Izumi et al., 2018). But as Izumi and colleagues point out, such bare noun phrase translations of (a) and (b) into Japanese (and other East Asian languages) are ambiguous between at least four different readings. Moreover, they show that the natural disambiguation of these phrases yield wrong interpretations of the Gödel cases. Thus, Izumi et al. argue that intuitions elicited by translated versions of Gödel-style cases are likely to reflect

¹³ For some recent examples of this approach see, e.g., Gerken and Beebe (2016) and Fischer et al. (2020).

misinterpretations of the scenario described -- a hypothesis which they confirm in a set of experimental studies.

Results from this study have important implications for an evaluation of Falsity. In effect, they indicate that recent findings of cross-cultural diversity in intuitions about Gödel cases are due to a performance error. Now, if descriptivist intuitions of East Asians elicited by recent experimental studies are likely to reflect misinterpretations, then it is unclear why their conflict with causal-historical intuitions of North-Americans should raise worries that the latter are false. So, even if diverging intuitions about the nature of semantic reference cannot both be right, there is reason to prefer one set of intuitions over another. Of course, this is not to say that semantic reference is thereby causal-historical. Rather, the claim is that mere evidence suggesting that causal-historical intuitions are demography-specific would not give rise to the hypothesis that this intuition is thereby likely to be false. As such, these considerations effectively rebut the first premise of Falsity.

As a further example of how findings in the Sources Project challenge the first premise of Falsity, consider recent work on the cognitive underpinnings of intuitions about free will. A number of such studies suggest that compatibilist intuitions -- according to which free will is *compatible* with determinism -- stem from the operation of epistemically questionable cognitive processes.¹⁴ For example, one set of studies show that compatibilist intuitions can be traced back to an inadvertent 'intrusion effect': a phenomenon in which people misinterpret the vignette of a thought-experiment due to reliance on assumptions that contradict important features of that vignette. Consider for example the study by Nadelhoffer et al. (2020). In a series of experiments, they found that people often judge that deterministic universes are outright impossible, and that subjects in those universes could intervene to effect changes in the causal chain leading up to their actions. In light of these findings, Nadelhoffer and colleagues conclude that people often (implicitly) hold *indeterministic* world-views. Furthermore, and more importantly, their findings also show a strong correlation between judgments that align with such an indeterministic world-view and the tendency to issue compatibilist intuitions. On the basis of these findings, they conclude that compatibilist intuitions are due to an intrusion effect: people misinterpret scenarios describing deterministic universes because they import features of their indeterministic world-view into their reading of those scenarios (for similar results: Rose et al., 2017). In a similar vein, further studies also provide evidence that compatibilist intuitions stem from the operations of other epistemically questionable cognitive processes (see, e.g., Clark et al., 2019; Feltz and Millan, 2015).

These findings also have important implications for an evaluation of Falsity. In effect, these findings suggest that even if intuitions about free will vary along demographic lines -- such that some demographic group has compatibilist intuitions, whereas another has incompatibilist intuitions -- this would not show that incompatibilist intuitions are thereby likely to be false. After all, the findings above indicate that compatibilist intuitions stem from epistemically questionable cognitive processes. And so, it is unclear why their conflict with incompatibilist intuitions suffices to raise the hypothesis that the latter is false.

¹⁴ Murray and Nahmias (2014) argue for the thesis that incompatibilist intuitions also stem from epistemically deficient psychological processes. However, see Rose and Nichols (2013) for a reply.

At this juncture, it is important to pause and elucidate the dialectical purposes of the discussion above. The arguments in this section provide examples of how evidence that an intuition is demography-specific *need not* indicate that it is thereby likely to be false. Through a more detailed understanding of the psychological processes that give rise to different intuitions, we can adjudicate between demography-specific intuitions. Now, this is not to say that findings of cognitive diversity *never* give rise to the threat of falsity. After all, without a more detailed understanding of the psychological processes driving conflicting intuitions in cases of cognitive diversity, there would be a lack of resources to make such a better informed assessment. However, in at least those cases where such resources are available, disagreements in intuitions cutting across demographic lines need not give rise to concerns about falsity. Thus, attempts to motivate the CCD via Falsity do not succeed.

On Unreliability

In this section, I argue against the formulation of the CCD which builds on the idea that demography-specific intuitions are unreliable, and so severely deficient from an epistemic point of view. This version of the CCD focuses on the notion of *aggregate* reliability, which takes reliability to be (roughly) a function of how probable it is that an intuition chosen at random will turn out to be correct. Intuitions found prone to large demographic effects are presumably unreliable on this dimension of evaluation. After all, if competing intuitions about a given thought-experiment are evenly distributed among large demographic groups, then, for any intuition chosen at random there is an even chance that it will be either correct or incorrect. My main contention is that even if intuitions are found to have a low aggregate reliability, this does not show them to be severely deficient from an epistemic point of view. To begin developing this proposal, it is useful to start with an example of how low aggregate reliability does not always seem to impugn the epistemic credentials of an epistemic source:

Microscope: A research lab receives two different shipments of microscopes from a trusted supplier: the first is of 100 units of a microscope of type A, and the second is of 100 of microscopes of type B. When later put to use to check whether a particular molecule is either round or oval, researchers observe differences in the outputs of A- and B-microscopes. Whereas A-microscopes show the molecule as round, B-microscopes show it as oval. The lab then receives news from the supplier that microscopes of type B were produced with a new lens material that was found to systematically produce distorted images of round objects.

Note that the aggregate reliability of the outputs of A- and B-microscopes will be low: only 50% of them will yield the right result on whether the molecule in question is round or oval. Now, let's assume for the sake of argument that aggregate unreliability is sufficient to show that an epistemic source is severely deficient from an epistemic point of view. On this view, the evidence about the operations of A- and B-microscopes would suggest that *both* are epistemically deficient. However, this seems like the wrong result. As stipulated in the case above, B-microscopes were found to systematically deliver wrong results -- consistently showing round objects as oval. This information should suffice to show that conflicts in the outputs of B-microscopes and A-microscopes should not raise doubts about the epistemic credentials of the latter. And so, evaluating the epistemic credentials of A-microscopes as a function of the aggregate reliability with B-microscopes seems unwarranted.

The arguments developed earlier in this section suggest that similar considerations apply to epistemic evaluations of intuitions that are found prone to large demographic effects. For, as those arguments show, psychological explanations of intuitions can provide reasons to favour the intuitions of a particular demographic group when the intuitions of another demographic group are found to stem from the operations of epistemically questionable psychological processes. And so, as in the case of the microscopes above, even if the intuitions of two demographic groups conflict and are thus found to have a low aggregate reliability, this can fail to show that each demography-specific intuition is equally deficient from an epistemic point of view. To buttress this proposal, recall the findings suggesting that the descriptivist intuitions of East Asians in response to Gödel cases are likely to reflect a misunderstanding caused by ambiguities engendered by errors of translation. Now, the conflict between the intuitions of East Asians and Westerners about Gödel cases means that the aggregate reliability of these intuitions will be low (as both demographic groups are quite large). But, even if this is the case, it is implausible to say that the causal-historical intuitions of North-Americans are severely epistemically deficient in the same way as the descriptivist intuitions of East Asians. And so, as in the case of the microscopes, evaluating the epistemic credentials of demography-specific causal-historical intuitions as a function of their conflict with demography-specific descriptivist intuitions seems unwarranted.

Similar conclusions can be drawn about *potential* findings of cross-cultural variation in intuitions about free will. As detailed earlier in this section, there is robust empirical evidence that compatibilist intuitions are likely to be mistaken -- insofar as they fail to track important features of determinism. So, even if two demographic groups are found to diverge in their intuitions about free will -- such that the aggregate reliability of their intuitions is low -- it would still be unwarranted to conclude that the intuitions of both groups are equally deficient from an epistemic point of view. In this way, an evaluation of the epistemic credentials of incompatibilist intuitions should not be affected by their conflicts with compatibilist intuitions.

In sum, these brief considerations suffice to show that even if intuitions elicited by a given thought-experiment are prone to large demographic effects, and thus have a low aggregate reliability, this need not be taken to show that each of these diverging intuition is equally severely deficient from an epistemic point of view. An improved understanding of the psychological processes that elicit intuitions allows us to make better informed assessments of which of them are in a better epistemic standing, and which ones we should be wary of relying on. And with this improved understanding, it becomes implausible to say that a given demography-specific intuition is epistemically deficient because it conflicts with the intuition of another demographic group which we have good reason to think is mistaken. And so, there is good reason to reject the formulation of the CCD that relies on the claim that intuitions found prone to large demographic effects are unreliable.

Conclusion

I have been evaluating the viability of the Challenge from Cognitive Diversity (CCD). Building on Machery's perspicuous arguments which helpfully articulate and defend the epistemological principles driving the CCD, I distinguished three formulations of this challenge. The first focuses on the threat of irrationality arising from evidence of cognitive diversity; the second on the threat of falsity arising from such findings; and the third on the idea that intuitions that are prone to large demographic effects are

unreliable. I then argued that all these three formulations fail. The central upshot of these arguments is that the CCD is not as compelling as some have suggested and that the upcoming international research effort testing for demographic variation in philosophical intuitions will not be as revolutionary for the philosophical discipline as some may think.

As a last note, it is important to emphasise what the arguments in this paper do not show. I have not argued that experimental findings *never* challenge the use of intuitions as evidence in philosophy. For example, I have not said anything about arguments to the effect that findings of *presentation effects* impugn the evidentiary status of intuitions.¹⁵ Likewise, I have not said anything about how empirical findings can undermine the evidentiary status of *specific* intuitions. Indeed, as some of the studies in the Sources Project discussed in previous sections persuasively show, some intuitions stem from the operation of epistemically problematic cognitive processes. And so, there is good reason to avoid relying on them in any evidential role. Also, I am not claiming that evidence of cognitive diversity fails to give rise to concerns about the use of intuitions in philosophy. After all, if disagreements uncovered by evidence of cognitive diversity are shown to *not* be permissive, and if there is no information about the psychological processes giving rise to different intuitions, then evidence of demographic variation may be taken to show that intuitions are likely to be irrational, false, or unreliable. However, the arguments in this paper demonstrate that it is false to infer, as many popular attacks on the methodology of philosophy do, that *mere* observation that intuitions are prone to demographic effects suffices to show them to be irrational, false, and/or unreliable.

¹⁵ Although see Zachary and Horne (2017) for a critique of challenges based on evidence of order effects.

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