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Why Intuition?

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Forthcoming in Philosophy and Phenomenological Research

Recent debates over philosophical methodology have overwhelmingly focused on the epistemological merits of a type of mental state called ‘intuition’. Philosophers on both sides have tended to write as though the defensibility of traditional, *a priori* philosophical method fundamentally depends upon whether or not this type of mental state can be shown to constitute a respectable evidential source. More often than not, the question is framed in terms of intuition’s reliability; opponents of traditional methodology attempt to show that intuition fails to reliably track the truth, while defenders attempt to refute these claims and to show that intuition is sufficiently reliable after all. One gets the sense that the very fate of intuition-based inquiry is taken to hang on the outcome of these disputes.

In this paper I will argue that this entire dialectic is somewhat misguided. The mental states which are generally assumed to fall under the category of ‘intuition’ likely comprise a highly heterogeneous group; from the point of view of psychology or of neuroscience, in fact, ‘intuitions’ appear to be generated by several fundamentally different sorts of mental processes. If this is correct, then the term ‘intuition’ may simply carve things too broadly. I will argue that it is a mistake to focus on *the* ‘reliability of intuition’; empirical evidence suggests that the reliability of one type of intuition may tell us next to nothing about the reliability of other types. Rather than debating the evidential status of intuition as a whole, philosophers interested in methodology would do well to focus their investigations much more narrowly.

The first section of this paper will examine the propensity of philosophers on both sides of the intuition debate to frame discussion in terms of the reliability of a supposedly cohesive, supposedly natural kind of mental state – intuition. In section two, I will briefly discuss the ‘generality problem’ for reliabilism, and the important possibility it raises: namely, that ‘intuition’ may not pick out a mental state of the appropriate grain for the purposes of current methodological debate. The generality problem itself will not be my focus – rather than attempting to offer any sort of solution to the generality problem, I will instead argue for a far narrower thesis. Specifically, I will claim that psychological and neuropsychological evidence motivates an alternative ‘carving’ of the mental states commonly referred to as ‘intuitions’ - one which suggests an epistemological situation which sharply contrasts with that suggested by the broad, ‘single-capacity’ conceptions of intuition surveyed in section one.

This alternate carving of the mental terrain, which I call the ‘heterogeneity’ approach to intuition, individuates mental capacities relating to ‘intuitive’ judgment much more narrowly. This narrow division is motivated by the hypothesis that there exist diverse psychological underpinnings for different classes of intuitive judgment – and the further hypothesis that this diversity indicates that reliability will need to be assessed separately for moral intuitions, for epistemological intuitions, for logical intuitions, and so forth. A review of empirical evidence supporting the first hypothesis will be the focus of section three; arguments for the second hypothesis will occupy section four. The upshot will be that, for purposes of methodological debate, the category picked out by ‘intuition’ appears hopelessly over-broad. Consequently, the question of the reliability of intuition – and, in turn, the question of the status of intuition-based methodology – will likely have no simple answer. The final section will discuss the consequences of this proposal for current debates on philosophical methodology.

I. Current perspectives on intuition

Though the criticisms and defenses of intuition which have arisen over the past fifteen or so years are quite varied, there is a general – though admittedly not universal – tendency to write as though the intuitive judgments invoked by philosophers¹ stand or fall together, and that their doing so will be a consequence of the reliability or lack thereof of some unified mental capacity called ‘intuition’. This tendency is shared even by philosophers whose views on the nature of this capacity are quite distinct. It will be useful to provide a few quick examples of the phenomenon.

Before we begin, however, a few caveats are in order. The examples below are meant to reflect the state of philosophical dialectic in a particular area – that of debates over philosophical methodology. Within these debates, I argue that there is a tendency to discuss intuition as if it were ‘monolithic’. This does not necessarily imply that philosophers tend, in actual practice, to *employ* intuition as though it were monolithic. Nor does it imply that the ‘received view’ in philosophy *as a discipline* is that intuition must be monolithic. My complaint, instead, is simply with the language and conceptual framework being employed in current methodological debates.

A final preparatory note: with the exception of George Bealer, the philosophers mentioned in this section are not always fully explicit regarding their own commitment to a monolithic conception of intuition. Their language has often suggested such an approach, but this may reveal nothing more than a failure to consider alternatives. I suspect several of the philosophers discussed would be wholly sympathetic to the ‘heterogeneity’ approach to intuition I offer in the second half of the paper. If this is right, then so much the better – the aim of this

¹ The term ‘intuition’, as used in everyday conversation, appears to differ substantially from the usage relevant to philosophy. In particular, the colloquial use of ‘intuition’ covers hunches, guesses, and the like. In this paper, use of the term ‘intuition’ is meant to reflect philosophical use.

paper is not to defeat some particular philosopher's position, but to call attention to an aspect of the intuition debate that I find to be counter-productive.

Now to the task at hand. Perhaps the clearest example of the single-capacity characterization of intuition is found in the work of George Bealer. Bealer claims that intuition forms something like a natural mental kind – that it is a “*sui generis*, irreducible, natural (i.e., non-Cambridge-like) propositional attitude” (Bealer 1998, 213). Specifically, Bealer holds the view that intuition is a certain sort of *intellectual seeming* – a conscious episode in which, upon considering some proposition P, P simply seems as though it *must* be true.

In practice, these intellectual seemings are generally identified by reference to their possession of some distinctive sort of phenomenology. In distinguishing intuitions from guesses, for instance, Bealer writes that “guesses are phenomenologically rather more like choices; they are plainly not seemings” (Bealer 1998, 210). A further example – “it does not *seem* to me that $25^2 = 625$; this is something that I learned from calculation or a table. Note how this differs, phenomenologically, from what happens when one has an intuition” (Bealer 1998, 210). Thus, a mental state is an intuition if and only if it is an ‘intellectual seeming’ accompanied by a sense of necessity - and such intellectual seemings are distinguished from other states by reference to their phenomenology. A very broad variety of states qualify. Beyond the standard examples provided by reactions to Gettier cases or Twin Earth scenarios, Bealer notes that we have intuitions

“that phenomenal colors are incompatible, that moral and aesthetic facts supervene on the (totality of) physical and psychological facts, that a given determinate (e.g., a particular phenomenal shade) falls under its determinables (e.g., being a phenomenal shade), that the part/whole relation is transitive over the field of regions, or that congruence is a symmetric relation” (Bealer 1998, 211).

Bealer also mentions mathematical intuitions, logical intuitions, and even intuitions about the infinite divisibility of space and time. Ultimately, Bealer argues that this ‘mental kind’ must be treated as a basic evidential source.

Joel Pust offers a similar account of intuition, agreeing with Bealer that intuitions are “a distinct kind of mental state with their own ‘intellectual’ phenomenology” (Pust 2000, 31). Pust’s characterization differs slightly from Bealer’s, however, in that Pust claims that an intuition must only present its content as necessarily true if the intuiter explicitly considers whether that content is necessary. Most importantly for our purposes, however, Pust claims that “intuition is a genuinely basic faculty distinct from sense-perception, and on no worse initial footing than our other natural faculties” (Pust 2000, 119). Like Bealer, Pust treats intuition as basic; and therefore, as an appropriate target for methodologists’ debates.

Ernest Sosa has offered a somewhat different account of the nature of intuition - one which, nevertheless, appears at times to resemble a single-capacity approach. Sosa writes that “to intuit that p is to be attracted to assent simply through entertaining that representational content. The intuition is rational if and only if it derives from a competence, and the content is explicitly or implicitly modal” (Sosa 2007, 101). For Sosa, then, a state counts as an intuition just in case it is an inclination to belief which does not arise from inference or from perception, but rather from mere understanding of the relevant proposition. As with Bealer, Sosa believes that a great variety of states qualify as intuitions – including our inclinations to believe “that $2+2 = 4$; that no sphere is a cube; that nothing is numerically self-diverse” (Sosa 1998, 260).

Sosa’s characterization of intuition as based on competence or understanding in principle leaves room for such understanding to be generated by several different sorts of processes. In fact, in his (2006), Sosa speculates that “various sources [of intuitive pull] are possible, and the

epistemic efficacy of an intuition might depend substantially on its source” (Sosa 2006, 212).

Nonetheless, in a later article Sosa discusses intuition in ways that strongly suggest that he has a single, unified capacity in mind.

“Prima facie there is a role for intuition in simple arithmetic and geometry, moreover, but *not only* there. Just consider how extensively we rely on intuition. Take, for example, any two sufficiently different shapes... you may know perfectly well that they are different. And what you know is not just that the actual *tokens* are different: you also know that any word token *so* shaped *would* be differently shaped from any *thus* shaped (as you demonstrate the two shapes in turn)... Why deny ourselves a similar intuitive access to the simple facts involved in our hypothetical philosophical examples? That would seem to be the default position, absent some specific objection,” (Sosa 2007, 3).

Throughout that same article, moreover, Sosa refers to *the* epistemic status of intuition, strongly implying that, even if intuition consists in diverse processes, it is nonetheless generally appropriate to treat it monolithically for epistemological purposes. We’ll return to this idea in section four.

While the philosophers mentioned thus far are by and large defenders of the traditional, *a priori* approach to philosophical methodology, philosophers less sympathetic to the traditional approach have also tended to characterize intuition in a broadly single-capacity vein. These philosophers are less likely to provide explicit definitions of intuition; indeed, like Sosa, some even entertain the idea that intuitions may have multiple sources. However, they frequently still tend to cast their methodological discussions in terms of intuition generally, suggesting an endorsement of the aforementioned assumption that intuitions, epistemologically speaking, stand or fall together. Robert Cummins, for example, has argued that “we should... dismiss philosophical intuition as epistemologically valueless” (Cummins 1998, 125). Brian Weatherson – who espouses a view according to which use of intuition should be restricted, rather than eliminated – writes, in response to Sosa’s comparison between intuition and perception, that “there is a distinction to be drawn here, since perception divides into natural kinds, visual

perception, tactile perception, etc, and we can use each of these to calibrate the others. It is hard to see how intuitions can be so divided” (Weatherson 2003, 4).²

Experimental philosophers, who have used empirical studies to question intuition’s philosophical merits, have a somewhat mixed track record with regard to their endorsement of the single-capacity approach. Weinberg, Nichols and Stich (2001) and Machery, Mallon, Nichols and Stich (2004) are fairly careful to restrict their conclusions to epistemic intuitions and to semantic intuitions, respectively; Weinberg et al, for example, claim only that “a sizeable group of *epistemological* projects...would be seriously undermined if one or more of a cluster of empirical hypotheses about *epistemic* intuitions turns out to be true” (Weinberg, Nichols and Stich 2001, 429, emphasis mine). Nonetheless, experimental philosophers also frequently make reference to the evidential status of intuition, full stop. Indeed, Alexander and Weinberg (2007) report the findings of the papers mentioned above in the following manner: “Weinberg, Nichols, and Stich and Machery, Mallon, Nichols, and Stich found that *intuitions* are sensitive to such factors as cultural, socioeconomic, and educational background” (Alexander and Weinberg 2007, 65, emphasis mine). As a further example of the tendency to treat intuition as a single capacity, Swain, Alexander, and Weinberg write that “We take the growing body of empirical data impugning various intuitions to present a real challenge for philosophers who wish to rely on intuitions as evidence” (Swain et al. 2008, 153). On the other hand, this claim is quickly followed by the suggestion that “philosophers who wish to continue relying on intuitions as evidence begin empirically investigating intuitions about their favorite thought experiments to determine whether, and *which*, intuitions may be taken as evidence” (Swain et al. 2008, 154, emphasis mine). Further, Weinberg (2007) argues that critics of intuition should avoid targeting

² Janet Levin makes a similar claim, writing that “in most cases, there is cross-modal agreement among the sources of empirical information, in that the deliverances of vision, touch, and audition rarely conflict... philosophical intuitions, on the other hand, comprise a single ‘mode’” (Levin 2004, 197).

intuition as a whole, and instead focus on targeting a particular type of *practice*, which he dubs “philosophers’ appeals to intuition”.

It does appear that many philosophers, either explicitly or implicitly, consistently or inconsistently, portray intuition as a fairly natural, unified type of mental state – and treat it as such during methodological debate.³ As mentioned before, much of this tendency might dissolve upon consideration of the alternative; it is my hope that it does. But drawing attention to his tendency is not a mere technical quibble on my part. On the contrary, as I’ll discuss in the next section, the grain of one’s epistemological categories makes a huge difference to evaluations of reliability. Since many philosophers take the evidential status of intuition to be (at least in large part) a matter of reliability⁴, the single-capacity approach may well be skewing our evaluations of traditional philosophical methodology.

II. A ‘generality problem’ for intuition?

³ It is worth noting some prominent exceptions to this approach. David Lewis believed that our intuitions are merely opinions or beliefs (Lewis 1983, x) - a view echoed by Peter Van Inwagen (2001, 149). More recently, Michael Devitt has argued that intuitions are “empirical theory-laden central-processor responses to phenomena, differing from many other such responses only in being fairly immediate and unreflective” (Devitt 2006, 491) – and that while some may be partly innate, many simply reflect accumulated experience. Finally, Timothy Williamson has recently provided a very explicit rejection of the view that intuitions form the primary source of evidence in philosophy, arguing that “what are called ‘intuitions’ in philosophy are just applications of our ordinary capacities for judgment” (Williamson 2004, 109).

⁴ Bealer is quite explicit in claiming that the evidential worth of intuition is to be determined by reference to reliability - “the only adequate explanation [of the evidential status of intuition] is some kind of truth-based, or reliabilist, explanation” (Bealer 1998, 214). Sosa takes reliability to be crucial to an evaluation of evidential worth, as well – “if the appeal to intuition is to help explain in some way how one knows any [of the things one intuits], then intuition must presumably be a reliable ‘source’ of true belief” (Sosa 1998, 262). On the other side of the debate, Weinberg and colleagues write that “intuitions about esoteric cases are in a state of challenge, in that significant evidence against their reliability has been amassed to which no response has yet been found” (Weinberg et al., under review).

The following is a well-known problem for reliabilist epistemological theories. In order to evaluate the justificatory status of a belief, the reliabilist must determine whether the process which generated the belief is a reliable one. But plausibly, any given episode of belief formation falls under numerous process types – the cause of my belief that there is a pen on my desk might be said to be an instance of perceptually-based belief formation, of visually-based belief formation, of pen-identification processing, and so on. How are we to decide which process type is relevant to determining the epistemological status of the belief at hand? This is known as the ‘generality problem’ for reliabilism.⁵

This type of problem, I think, has serious consequences for every account which takes reliability to be a litmus test for any sort of epistemological category – be it knowledge, justification, evidence, or otherwise. When one uses reliability to determine the epistemological value of any given state, there is a serious possibility that the process type said to produce that state may be characterized too narrowly, or too broadly. If the process type is of the wrong grain, one might fail to accord epistemological value to a state which warrants it. Arguably worse, though, epistemological value may be granted where it ought to be withheld. A worry therefore arises. As noted earlier, philosophers have frequently defended the use of intuition-generated beliefs by appealing to intuition’s reliability. But might intuition be too broadly-characterized, or even too narrowly-characterized, at least for purposes of methodological debate? Might we do better to focus on processes⁶ of a different degree of generality?

⁵ For an introduction to the problem, see e.g. Conee and Feldman (1998) and Alston (1995).

⁶ The description I have just given casts intuition as a *process*. This characterization may seem to be in tension with the characterizations of intuition found in the literature – as can be seen from the previous section, intuition has variously been described as a *sui generis* propositional attitude (Bealer, Pust), as an inclination to believe (Sosa), or as simply a type of belief (Lewis). On each of these characterizations, it seems most natural to interpret ‘intuition’ as applying to the *outcome* of a mental process, rather than to a mental process itself. Nevertheless, at least two of the authors just mentioned also explicitly appeal to the ‘reliability of intuition’ – and on most standard versions of reliabilism, reliability is a property of processes. Plausibly, these authors’ usage reflects the fact that the term ‘intuition’ is rather like ‘perception’ – one can speak of perception as a mental process, or one can speak of ‘a

I want to emphasize that I have no intention of offering a general-purpose solution to the generality problem. Nor is it my intention to use the generality problem as a premise in an argument against a reliabilist conception of evidence, or even against a reliability-based assessment of the worth of intuition. On the contrary, I take reliabilism to be among the most plausible epistemological approaches currently on offer, and I am quite convinced that reliability should continue to be a central consideration in debates over philosophical methodology. My aim, instead, is merely to call attention to the following strange fact: while there have been many attempts to offer definitions that succeed in capturing most cases philosophers are inclined to classify as intuitions, very little explicit consideration has been given to the question of whether the categories so defined are ones which are appropriate foci for methodological debate. That is to say, philosophers do not generally attempt to defend their accounts from the accusation that they carve mental states too broadly or too narrowly for the purpose at hand – namely, the purpose of attacking or defending traditional philosophical methodology.⁷ This is particularly

perception' in the sense of a state produced by the process(es) of perception. Alternately, perhaps the claim that intuition is reliable is only meant to indicate that every intuition is produced by a reliable process. However, in the absence of specific claims to the contrary by the authors, the most obvious interpretation of *that* claim is that every intuition is produced by the *same* reliable process (type). Finally, perhaps the claim that intuition is reliable should be taken to mean that every intuition possesses the property of being sufficiently truth-tracking (in, e.g., the sense specified by Nozick (1981)). But again, in the absence of specific details from the authors, the most obvious way to defend this claim would be to hypothesize a single process (type) which grants this property to all intuitions it produces. Thus, essentially the same problem remains, regardless of the interpretation given to the 'reliability of intuition' – what reason is there to believe that the 'intuition-generating' process type is of the appropriate grain?

⁷ Bealer does briefly mention the generality problem. He notes that the category of mental states including all and only beliefs that there is no largest prime does not qualify as a reliable source of evidence, despite the fact that such beliefs are always true. This category does not qualify, Bealer claims, because only basic sources of evidence are to be evaluated according to a reliabilist criterion; and further, "something can be a candidate basic source only if it is a natural (i.e., non-Cambridge-like) propositional attitude. Intuition, appearance, introspection, belief, desire, guessing, wondering all qualify" (Bealer 1998, 218). I admit to some perplexity over this response. Reliabilism is standardly cashed out in terms of the reliability of mental *processes*; further, a process reliabilism is suggested by Bealer's characterization of reliability in terms of the existence of a "strong modal tie between [the candidate source's] deliverances and the truth" (Bealer 1998, 216). However, Bealer's aforementioned 'natural propositional attitudes' include belief and desire, neither of which are plausibly construed as processes, much less processes of the appropriate grain for reliabilist evaluation. 'Belief' makes the list of potential basic sources of evidence – perhaps 'belief-formation' is the intended process? But belief-formation is a paradigm case of a process-type which is too broad to be usefully evaluated for reliability. Say it turns out that an individual's beliefs tend towards 80 percent truth. Does it follow that every last one of her beliefs is justified, by virtue of being produced by the reliable process

surprising given the fact that the states we are inclined to classify as ‘intuitions’, when viewed from the standpoint of psychology, appear to be fairly heterogeneous.

Even from a standpoint of psychological naïveté, intuitions can seem a motley bunch. There are classificatory intuitions regarding whether x does or does not count as a case of knowledge, a case of pain, or a case of morally permissible action. There are modal intuitions, regarding whether a certain case is possible, or necessary. There are logical intuitions. There are mathematical intuitions. There are intuitions which may not fall under any of these categories, such as the intuition that phenomenal colors are incompatible. Unsurprisingly, there is at least some empirical evidence that these intuitions are not all produced in the same manner.

In the next section, I will review some empirical evidence which I take to suggest that different types of intuitive judgments are produced by highly diverse psychological processes. In the following section, I’ll turn to the question of whether such diversity in underlying psychological processes (should it indeed exist) motivates focusing on a more fine-grained carving of the mental domain, at least for methodological purposes. My claim will be that it surely does. Indeed, I’ll suggest that the existence of significant diversity would make the question of the reliability of intuition about as informative, at least for methodological purposes, as the question of the reliability of thinking.

III. Evidence for heterogeneity

We will now begin a brief tour of some relevant empirical work on types of cognition generally regarded as ‘intuitive’. This section will present two general sorts of considerations

belief-formation? This seems implausible. After all, this same individual might have (say) a policy of believing everything she reads in tabloid newspapers, and might therefore have only a 20 percent accuracy rate for beliefs regarding celebrity exploits. Surely her tabloid-informed beliefs are not to be counted as reliable.

which I take to provide good reason to take a ‘heterogeneity’ approach to intuition seriously. The first involves brief presentations of the views of researchers who have suggested more or less domain specific models for the types of cognition under consideration. This may seem, *prima facie*, to involve an inappropriate sort of ‘argument from authority’. However, my aim is not to invoke such models as proof of the heterogeneity approach, but merely to demonstrate that alternatives to the single-capacity perspective on intuition exist and are taken seriously in non-methodological contexts. Insofar as the psychological (and in some cases, philosophical) literature contains serious consideration of the existence of such domain specific processing, it is incumbent on philosophers interested in the epistemology of intuition to at least take such possibilities into account. The primary claim of this paper is simply that philosophers have generally failed to do so, to the detriment of current debates on methodology.

The second type of consideration presented in favor of the heterogeneity approach is a bit more concrete, involving examples of domain-specific cognitive deficits in areas relevant to philosophical theorizing. Such deficits may either be acquired as a result of brain lesions, or they may manifest as a developmental impairment. In either case, the existence of such deficits can provide evidence that certain types of ‘intuitive’ reasoning may be dissociable from other types. If, for example, one’s moral reasoning can become impaired without any effect on one’s logical reasoning, then this provides evidence that moral reasoning is at least to *some* degree independent from logical reasoning – and may even be subserved by something like a separate cognitive mechanism.⁸⁹ However, it must be mentioned that in such a case the possibility would

⁸ Where ‘cognitive mechanism’ is not intended to suggest anything like a full-fledged Fodorian module, but merely some kind of domain-specific capacity.

⁹ There are, admittedly, other possible interpretations. A single ‘intuition mechanism’ might produce both moral and logical judgments, but moral judgments might involve higher demands on the mechanism and might therefore be the first to show impairment when the mechanism has been damaged. Even if this were the correct interpretation, however, there would still be certain epistemological upshots. Consider a parallel case with vision. Though the same basic mechanisms underlie both moderate-distance and long-distance vision, the fact that long-distance vision

remain that moral reasoning is dependent on logical reasoning in *addition* to some other factor – and that, therefore, impairment of *logical* reasoning might still result in impairment of *moral* reasoning.

In certain cases, though, further evidence may point to a double dissociation – that is, a case in which function A can become impaired while function B remains intact, *and* (by some other route) function B can become impaired while function A remains intact. Double dissociations provide strong evidence for independence of function – much stronger than that provided by the single dissociations considered above. But it is important to note that even when a double dissociation is found to be absent, a single dissociation may still provide evidence that two functions should be considered separately for the purpose of an evaluation of reliability.¹⁰

With the preliminaries now in place, let us turn to a presentation of some relevant empirical work. To begin, it is quite plausible that the psychological processes that produce classificatory judgments¹¹ (judgments about, e.g., whether a given case counts as an instance of

is more easily impaired (as in myopia) has potential consequences for, e.g., court trials that rely on a witness's visual experiences as evidence. A court cannot dismiss the possibility of myopia-induced error in a witness's long-distance identification of a suspect by simply appealing to the on-balance reliability of vision. *Mutatis mutandis* for the intuition case; any evidence for even single dissociations within the realm of intuition ought therefore to be given serious attention.

¹⁰ Consider the case of reading comprehension and visual acuity. Dyslexia provides evidence that performance on reading comprehension tasks can become substantially impaired without impact upon one's visual acuity. The reverse does not hold; if one's visual acuity is sufficiently impaired, one's performance on reading comprehension tasks will be as well. This performance impairment occurs, of course, because the successful operation of one's basic visual processes is a *prerequisite* for successful reading comprehension. When the range of circumstances in which one's vision operates successfully is decreased, the range of circumstances in which one's reading ability operates successfully is thereby decreased as well. Nonetheless, reading ability and visual acuity are plausibly best considered as separate for epistemological purposes; further, the single dissociation discussed above might plausibly be taken to provide at least some evidence for their separation.

¹¹ From here on, I will frequently refer to 'judgments' rather than 'intuitions'. I do so because data from the studies being discussed generally involve verbally reported judgments; though the studies concern areas of cognition philosophers take to involve intuition, the term 'intuition' is rarely used. This shift in vocabulary is liable to strike some readers as unwarranted – particularly philosophers who take intuitions to be seemings or inclinations rather than judgments or beliefs. There are a few things to say on this front. First, it is not obvious how one would empirically test for the presence of a seeming or an inclination other than by eliciting reports of judgments *caused* by those seemings or inclinations; thus, it's not obvious to me that findings on judgment *automatically* 'change the

knowledge, or of morally right action) are quite different from the processes underlying our use of fundamental logical rules or the processes underlying basic mathematical cognition.

Neuropsychological and developmental evidence raises the possibility, for example, that there may be one or more domain-specific capacities underlying mathematical processing.

McCloskey et al (1985) propose two systems for mathematical cognition – the ‘number-processing system’ and the ‘calculation system’. Each of these systems, in turn, is hypothesized to contain several sub-systems; for example, the number-processing system contains both comprehension and production components. Stanislas Dehaene and his colleagues propose a ‘triple-code’ system, centered on a domain-specific, innate core number system found in the intraparietal sulcus (Dehaene and Cohen (1995), Dehaene (1999), Dehaene et al (2003)). The core system represents quantities in an analog, nonverbal format – rather like a number line - and is useful for approximate calculations and for comparisons of magnitude. However, the brain is also capable of representing numbers in verbal (number word) and visual (Arabic numeral) formats, and these types of representation may be recruited when more precise calculation is required, or when specific mathematical facts must be stored or recalled. Feigenson et al (2004) suggest that there may be an additional innate system for number comprehension, one which operates on small, precise quantities, allowing for the tracking of small numbers of individual objects – it is this system that allows us to tell, at a glance, the number of items in a group containing between one and four members.

subject’ – the judgments in question may be *caused by* rather than *identical to* intuitions. One could of course further object that we have no proof that the judgments elicited in these studies were in fact generated by *intuition*, rather than by some non-intuitive route. The situation here is complicated by the fact that it is exactly the boundaries of intuition that are at issue. The requirement cannot be that *every* judgment elicited in a given study must be produced by a state that philosophers would classify as an ‘intuition’ – room should be left for a re-carving of the mental terrain that cross-cuts, rather than simply subdivides, ‘intuition’. The situation is more problematic if *none* of the judgments elicited in a given study reflect ‘intuitions’ in the standard philosophical sense, or if very few do. I find this to be unlikely, though I admit it cannot currently be ruled out as a possibility – further empirical work would be needed in order to settle the matter.

As for evidence from dissociability, the existence of selective impairments in mathematical ability resulting from brain lesion – a disorder known as ‘acalculia’ – suggests the possibility that the processes underlying mathematical calculation are more or less independent of other sorts of intuitive cognition.¹² There is even some evidence for very specific dissociations *within* the mathematical domain. Dehaene and Cohen (1997), for example, discuss two intriguing patients - one impaired in subtraction, but not in multiplication, and the other in multiplication, but not subtraction. McCloskey et al (1985) report a patient who could accurately compare the magnitudes of quantities presented with number words (e.g. “four”), but not quantities presented in Arabic numerals (e.g. “4”); they also report a patient who could perform basic calculations, but who showed a specific difficulty in retrieving previously learned arithmetical facts (such as $7 \times 7 = 49$).

At first glance, some of these findings may seem rather irrelevant to an investigation of the sorts of intuition philosophers are concerned with. After all, the judgment that the group of objects in one’s visual field contains exactly three members (for example) is unlikely to be recruited as evidence for or against any philosophical position; *mutatis mutandis* for the ability to compare magnitudes presented in Arabic numerals. However, other mathematical judgments – such as the judgment that $2+2=4$ – *are* frequently cited by philosophers as paradigm instances of intuition¹³. At the very least, the judgment that $2+2=4$ appears to fit Bealer’s characterization –

¹² Some cases of acalculia appear to arise due to other deficits, such as language deficits. However, there are other cases that appear to be ‘pure’. Both types of acquired acalculia stand in contrast to the developmental deficit in mathematical reasoning known as dyscalculia. See Ardila and Rosseli (2002) for an extensive overview of these disorders.

¹³ Sosa explicitly cites the judgment that $2+2=4$ as an instance of intuition (1998, 258); Bonjour cites the judgment that $3+2 = 5$ (Bonjour 1998, 104). Bealer claims that his notion of intuition is “relevant to justificatory practices in logic, mathematics, philosophy, and linguistics” (Bealer 1998, 213).

it is an intellectual seeming¹⁴ which presents itself as necessary. In fact, I would go so far as to argue that all three of the mathematical judgments mentioned above fit Bealer's characterization; but even putting this aside, a more important consideration remains.

Consider the following two hypotheses. First, there might exist a monolithic faculty of 'philosophical intuition' or 'rational judgment' which produces epistemological and moral intuitions along with basic arithmetical intuitions such as the judgment that $2+2=4$ - but which is unrelated to the processes which produce, e.g., the 'non-philosophical' mathematical judgment that there are three objects in one's visual field. Alternately, there might exist a mental process (or, more likely, a cluster of closely related processes) which plays a central role in the production of a variety of mathematical judgments, but which has little to do with (for example) moral cognition. The empirical work discussed above is more in line the second hypothesis; it thereby casts doubt on a monolithic conception of philosophical intuition.

Let's move to another domain of intuitive thought – logic. Though there is somewhat less empirical work on the psychological underpinnings of the human capacity for logical cognition, at least some researchers have proposed models of deductive reasoning which rely on representations of formal inference rules. Both Braine (1978) and Rips (1983, 1994) present models which operate via application of stored inference rules similar to those of natural deduction systems in formal logic. More recently, Reverberi et al (2009) have proposed three separate cognitive components for elementary deductive reasoning; one component for rule application, one for tracking the overall structure of the proof, and one for the storing of intermediate conclusions. Reverberi et al also suggest that the processes involved in elementary logical reasoning may differ from those involved in more sophisticated logical reasoning.

¹⁴ Or better, is *caused* by an intellectual seeming – again, though discussion is being cast in terms of 'judgments', this is primarily for ease of exposition and should not be taken as an endorsement of the view that intuitions are a species of judgment.

Plausibly, systems like the ones the above authors present would be dissociable from systems for other sorts of ‘intuitive’ cognition. Indeed, some evidence for selective impairment in logical cognition exists. Reverberi et al (2009) found that patients with lesions in the medial frontal cortex were impaired in tests of elementary deductive reasoning.¹⁵ They hypothesize “that the overall performance of medial patients could be explained in terms of a deficit in identifying and representing the overall structure of the proof required to solve a deductive problem” (Reverberi et al 2009, 1113). Further, as with mathematics, it appears that selective deficits can arise even *within* the logical domain. In one particularly fascinating study, Waltz et al. (1999) found that patients with lesions in the prefrontal cortex showed a selective impairment in their ability to perform logical inferences involving reasoning with multiple relations – e.g., in their ability to infer that Bill is taller than Sue from the fact that Jane is taller than Sue and Bill is taller than Jane.¹⁶ Waltz et al take this to be evidence for a specific cognitive ability, central to complex logical reasoning, involving the integration of multiple relations – an ability for which the prefrontal cortex may play a central role.

There is at least some evidence, then, that mathematical and logical intuitions are each subserved by at least one – and plausibly multiple – proprietary types of mental process. By contrast, it is rather less plausible that these judgments are produced by some general-purpose ‘intuition’ mechanism shared with classificatory judgments regarding what counts as knowledge, free will, and the like. The hypothesis can be taken further, however. There is some preliminary evidence that there may even be separate capacities underlying different sorts of classificatory judgments. Though there has not yet been much work on, say, epistemological cognition, there

¹⁵ This impairment was not attributable to impairment in verbal comprehension. The deficits of medial frontal patients were also not attributable to deficits in working memory; by contrast, left lateral frontal patients exhibited deficits which appeared to be at least partially linked to deficits in memory. Patients with lesions to the right lateral frontal cortex were unimpaired.

¹⁶ Waltz et al note that these deficits were not attributable to deficits in semantic knowledge or episodic memory.

are at least two philosophically relevant areas for which empirical research indicates some degree of domain specificity: moral cognition and folk psychology.

Several researchers have suggested that our moral classifications may be guided by domain-specific mechanisms. Sripada and Stich (2006) suggest that humans possess psychological mechanisms enabling the acquisition and deployment of norms present in their communities. Specifically, Sripada and Stich propose the existence of two innate mental mechanisms devoted to moral cognition. The first, the acquisition mechanism, identifies information regarding norms present in the local environment. The implementation mechanism stores this information, and uses it to generate motivation to both comply with the norms and punish those who violate them. In a somewhat different approach, Mikhail (2007) suggests the existence of an innate, universal ‘moral grammar’ underlying our normative judgments. Like Chomskian universal grammar for language, this moral grammar provides a common base underlying the great variety observed in culturally local moral systems. And, as with language, this moral grammar places inherent restrictions on the possible range of moral intuitions.

There is a fair amount of evidence that the human capacity for moral judgment can be selectively impaired. The disorder of psychopathy produces subjects with a marked lack of empathy who frequently engage in remorseless amoral behavior. Further, although psychopathy is not associated with any particular deficits on standard cognitive tests, Blair (1995) provides evidence that psychopathic patients have difficulty distinguishing morally wrong actions from actions which merely violate convention. The ability to draw a distinction between moral and conventional violations is often invoked by psychologists as a test of development in moral cognition¹⁷ - for, unlike conventional violations, moral violations tend to involve harm to others

¹⁷ See e.g. Turiel (1983), Smetana(1993). However, see Kelly et al. (2007) for a critique of the relevance of the distinction to moral cognition.

and are typically judged to remain wrong even in the absence of authority-mandated rules prohibiting them. Psychopaths appear to be blind to these differences – for example, the subjects in Blair’s study were much less likely than controls to cite harm to another when asked why a given act was morally wrong.

Even within the realm of moral judgment, evidence suggests that dissociations may occur; and that, therefore, multiple distinct processes may be at work. An fMRI study by Greene et al. (2001) revealed distinct areas of activation when considering ‘impersonal’ moral dilemmas (such as the traditional trolley problem, in which one must choose whether to flip a switch to divert a trolley from a track where it would kill five persons to a track where it would kill one) versus ‘personal’ moral dilemmas (such as the footbridge variant, in which one must choose whether to push a single large man off of a footbridge to stop a trolley from killing five).¹⁸ In a similar vein, Koenigs et al. (2007) found that patients with damage to the ventromedial prefrontal cortex make abnormally utilitarian judgments in response to emotionally charged moral dilemmas; specifically, in dilemmas where aggregate welfare could be increased by performing an emotionally aversive act (such as in the footbridge dilemma), VMPC patients were more likely than controls to say that they would perform the aversive act. By contrast, the VMPC subjects provided normal judgments on other moral dilemmas.

Finally, Cushman (2008) provides evidence that judgments of wrongness and judgments of blameworthiness differ in their reliance on information about mental states. For instance, subjects are much more likely to blame an agent for an irresponsible action when someone is

¹⁸ An anonymous reviewer notes that Greene views the processes involved with personal moral dilemmas as being ‘intuitive’, and that these intuitive processes might be viewed as forming part of a separate intuitive faculty, in that they appear to be quite distinct from what we might view as more considered, ‘non-intuitive’ moral judgments. However, the factors which Greene takes to underwrite the ‘intuitive’ processes – for example, emotional activation – seem likely to be fairly specific to moral cognition. It seems unlikely that emotional activation is a deep factor in, say, intuitions in the logical sphere. So even if ‘intuitive’ *moral* judgments are separate from ‘non-intuitive’ *moral* judgments, there still seems to be little unity, at the psychological level, between these states and ‘intuitive’ judgments in other areas.

actually harmed, as opposed to a case where an irresponsible action resulted in no negative consequences. This holds even when both cases involve an agent who *intentionally* acted in an irresponsible manner. Judgments of *wrongness*, by contrast, rely heavily on information about intent, and largely disregard consequences. Cushman takes this asymmetry to suggest that the two types of judgment are underwritten by distinct cognitive processes, hypothesizing that the intent-driven, mental state-based process emerges later in development than does the simpler consequence-driven process. Cushman also hypothesizes that the two processes “act competitively to determine our [moral] judgments” (Cushman 2008, 355).

In addition to moral cognition, there may also be one or more specific cognitive capacities involved in our folk psychological judgments about mental states. There is a vast literature on the mental processes by which we understand the beliefs and desires of others – an ability often referred to as ‘mindreading’. Many of the participants in this literature propose a distinctive, domain-specific mechanism responsible for mindreading abilities. Baron-Cohen et al (1985), Leslie (1987, 1994), and Scholl and Leslie (2001) hypothesize an innate mechanism that allows for ‘second-order’ representations – representations, e.g., of the mental representations of other people. This mechanism follows a consistent developmental path among normal children, allowing them to pass tests requiring an understanding of the possibility of false beliefs at around four years of age.¹⁹ Nichols and Stich (2003) propose a somewhat different model of folk psychological cognition; their model relies on tacit theory as well as on the ability to simulate the mental processes of others. Like those of the authors discussed above, the account provided by Nichols and Stich is more-or-less domain specific. Alvin Goldman (1989, 1992, 2006) presents a theory of mindreading that relies primarily on simulation, with only a limited role for theory.

¹⁹ The ‘false belief’ task is a standard test of folk psychological development – see Wimmer and Perner (1983) for the initial formulation of the task, as well as Wellman et al. (2001) for a meta-analysis of studies involving the task.

Goldman's is not a purely domain-specific account, since he takes simulation to underlie other sorts of cognition, as well; however, it still suggests some degree of heterogeneity in intuition, for Goldman does not take simulation to underlie logical or mathematical cognition.

The hypothesis that folk psychological cognition involves some degree of domain specificity is also supported by recent neuropsychological work. Fletcher et al. (1995) found several specific brain regions which showed increased activation during presentation of vignettes requiring mindreading compared to non-social control stories. Even more tellingly, Saxe and Kanwisher (2003) demonstrate increased activation in the temporo-parietal junction when reading vignettes involving false beliefs, but not when reading vignettes involving false non-mental representations (i.e., a photograph that no longer accurately represents its subject).

There is also evidence that our capacity for mindreading can be selectively impaired. Autistic patients famously have difficulty with social interaction and communication, and children with autism generally fail the standard false-belief task psychologists use as a test for development of mindreading abilities. The mindreading deficit associated with autism is not obviously linked with disproportionately high deficits in other 'intuitive' capacities – for example, autistic patients do not seem to have difficulty on the moral/conventional tasks described earlier (Blair 1996). Indeed, autistic patients occasionally even exhibit savantism, which frequently manifests in the form of increased mathematical abilities – a prototypically intuitive kind of cognition. Further, autistic patients may not even exhibit impairment in all mind-related cognition – see e.g. Baron-Cohen (1991) for evidence that autistic individuals understand that emotions can be caused by frustrated desires, but do not understand that they can be caused by false beliefs.

Admittedly, a fair bit of caution is necessary in assimilating *philosophical* intuitions about beliefs and other mental states to the mindreading capacities just discussed. It may turn out that the cognitive processes underlying our judgments about the *actual* mental states of others do not underlie our *modal* judgments about the mind – our judgments about, e.g., whether philosophical zombies are possible.²⁰ However, there are some cases where a connection between mindreading and philosophical intuitions about the mind seems fairly plausible. It is quite unclear, for instance, whether even a high-functioning autistic subject would share the mainstream philosophical intuition on Frank Jackson’s “Mary” case. That case, after all, involves intuitions about whether Mary would come to have new knowledge – indeed, new *beliefs* – upon exiting her black-and-white cell. As a further example, it is unclear whether an autistic subject would share the mainstream intuitive reaction to John Searle’s Chinese room; plausibly, a deficit in understanding the *beliefs* of others would affect the subject’s ability to judge whether the man in the room *understands* Chinese. More empirical investigation is of course needed; but for current purposes, all that is required is plausibility, not proof. The possibility of one or more domain-specific mechanisms underlying certain intuitions about mental states, at the very least, warrants serious consideration – and therefore supports serious consideration of a heterogeneous approach to intuition.²¹

I wish to conclude this section with an important qualification. I’ve suggested that the findings reviewed in this section give some support to the idea that the ‘intuition’ category might more helpfully be subdivided along broadly content-based lines – resulting in categories like

²⁰ There has been some interesting recent research into the nature of folk intuitions on consciousness – see for instance Knobe and Prinz (2008), and Sytsma and Machery (2009). However, I am unaware of any findings as of yet on the dissociability (or lack thereof) of consciousness intuitions, nor am I aware of any authors who propose domain-specific models of this type of reasoning.

²¹ It is worth noting that Jennifer Nagel (2007) discusses the false belief task in relation to the development of *epistemological* intuition, rather than intuitions about the mind. Indeed, it seems plausible that epistemological cognition, rather than being fully independent from cognition about mental states, might be dependent upon it (though the reverse may not hold).

‘moral intuition’, ‘epistemological intuition’, and so forth. This is indeed one possible way to re-carve the intuitive terrain, but I wish to emphasize that it is not the only possible approach. In fact, the evidence reviewed above suggests that the actual situation may be far more complicated; even *within* domains like moral or logical cognition, substantially different types of processing may be involved. If this is right, the epistemological features of philosophical methodology may be even more complex.

I don’t, in fact, take myself to have conclusively demonstrated any particular psychological thesis regarding the domain-specificity of intuitive cognition – such a task is far beyond the scope of a single paper, and my presentation here has been decidedly introductory as well as one-sided. But I do hope to have motivated the *plausibility* of some form of deep diversity in the psychological processes underlying the states philosophers have labeled ‘intuition’. I also hope to have provided some indication of the complexity and depth of the psychological and neuroscientific literatures on ‘intuitive’ areas of cognition - these literatures contain a wealth of findings of great relevance for philosophers interested in the epistemology of intuition. Ultimately, the characterization of the psychological processes underlying intuition is an empirical question – an empirical question which I suggest has been neglected by philosophers concerned with methodology, and one which I’ll now argue may have great ramifications on our assessments of traditional methodology.

IV. Psychological diversity and the carving of the intuitive

Let’s suppose that *some* form of hypothesis regarding the diversity of psychological processes underlying intuition should turn out correct. What consequences, if any, would this

have for methodological debates? To begin, it would certainly not show that intuitions do not exist. There is nothing wrong with using the word ‘intuition’ as a technical term to pick out a group of mental states defined by, e.g., shared phenomenology. What’s more, it may well be that the word ‘intuition’, as used in the standard non-technical sense, in fact refers to just such a category. So we should in no sense endorse a form of eliminativism about intuition.

However, the mere existence of intuition is not enough. While there may be such a thing as ‘intuition’, I have argued in section two that we must not simply assume that it is the relevant classification for the epistemological purposes of methodological debate. Diversity in processes underlying intuition would provide empirical motivation for an alternative, more fine-grained carving of mental states. On such a carving, evidence for the reliability of (e.g.) moral intuitions would not straightforwardly provide evidence for the reliability of other sorts of intuitive cognition. Thus, this carving, if adopted, could significantly affect evaluations of the epistemological merits of any of the particular states falling under the term ‘intuition’.

The crucial question, then, is as follows - which carving *ought* we to adopt when evaluating the epistemological status of traditional methodology? One could certainly argue that the broader carving ought to be retained. After all, philosophers are quite generally in the habit of assigning epistemological evaluations to faculties like perception and memory, both of which are quite clearly rather heterogeneous at the psychological level. Perception is said to be a basic epistemological source of evidence, to be uncontroversially reliable, and so forth. Why can we not say similar things about intuition? Further, there is plenty of literature devoted to the ‘rationality debate’ – the question of the degree to which humans can be said to be rational in face of certain well-known, common errors on basic reasoning problems such as the Wason

selection task. No one takes participants in that debate to be blithely ignoring distinctions between various types of reasoning; they are merely concerned with a higher-level question.

It is true that, in one sense, quite reasonable to inquire as to the overall reliability of types of reasoning we generally categorize as intuitive. One might simply be intrinsically interested in the reliability of intuition; or one might wish to appeal to the reliability of intuition to demonstrate the truth of some general epistemological claim (such as in a discussion of skepticism). But I'd like to suggest that such projects are fairly orthogonal to current debates over current philosophical methodology.

Current debates over philosophical methodology are not *merely* academic investigations of, say, the existence and scope of human knowledge – they are (or should be) practical debates over how we ought to conduct ourselves when doing philosophy. For parallel questions in other fields, it seems clear that statements about the general reliability of a certain broadly characterized faculty are typically unhelpful. Compare, for example, questions regarding the use of perceptual capacities in scientific observation. When considering one's experimental design, it is rarely helpful to be informed that the faculty of perception is generally reliable, and that its deliverances thus constitute a basic source of evidence – it is typically more important to know, for example, that human visual estimates of length are fairly unreliable and that one's measurements should therefore be conducted with use of a ruler. Similarly, broad statements about the overall reliability of memory are rarely helpful when considering the status of witness testimony in a courtroom. Instead, we tend to turn our attention to more specific processes – our propensity towards fabrication of details in long-term memories of traumatic experiences, say.

It may well be that perception and memory can usefully be treated as monolithic partly *because* their overall status as 'appropriate' epistemological sources is not seriously in doubt.

Philosophers can and do raise questions about whether perception leads to genuine knowledge; but rarely is there any serious suggestion that perception (as a whole) should no longer form part of our belief-forming practices. Even if perception turns out to fail all epistemological tests put before it, it is surely out of the realm of possibility to give it up entirely. Any serious questions about how perception ought to be employed occur at far more fine-grained levels of analysis. By contrast, current methodological debates over intuition *do* tend to treat rejection of intuition (as a whole) as a serious possibility. But why should this be any more appropriate for intuition than for perception?

IV. Consequences for current debates

I hope to have motivated the narrower carving of ‘intuitive’ states as a serious competitor to the broader, monolithic conception currently in use. At the very least, I hope to have shown that if there *are* in fact diverse psychological processes underlying different subsets of ‘intuitive’ judgments, then philosophers in the business of arguing for or against intuition need to provide arguments as to why reliability assessment should *not* target these processes individually. I’ve noted that the epistemological situation suggested by the heterogeneous carving might well be very different from the situation suggested by a monolithic conception; on the narrower carving, individual capacities must be evaluated separately, and may turn out to vary widely in reliability.

It is true that, in principle, nothing rules out the possibility that each of the individual subtypes of intuition will be independently found to be reliable. Nor does anything rule out the possibility that each will be found *unreliable*. But in order to argue for either thesis, one would have to examine the relevant mechanisms separately, rather than attempting to argue for the

reliability of intuition generally. For some styles of argument, this will present little trouble. As an example, consider the recent data on cross-cultural variation in epistemological and semantic intuitions found in Weinberg, Nichols and Stich (2001) and Machery, Mallon, Nichols and Stich (2004). These data have often been taken to pose a broad, general threat to the use of intuitions in philosophy. However, on the heterogeneity approach, experimental findings on cross-cultural variation in epistemic intuitions (e.g.) will primarily bear weight on the question of the reliability of epistemological intuitions. Such findings will give us little direct evidence as to the reliability of logical intuitions or of moral intuitions. However, the general approach of using empirical findings on variation to challenge philosophical methodology is not thereby undermined; if an experimentalist suspects unreliability in other domains, she may simply run more studies.

On the other hand, some styles of argument will be less amenable to reformulation in a heterogeneity framework. In particular, ‘self-defeat’ arguments, which aim to show that a critic of intuition must tacitly rely on intuition (and that intuitions must therefore be evidence), will become problematic. Bealer (1993), for example, argues that in order to formulate any successful theory of justification, one must invoke certain basic epistemic classifications, or ‘starting points’. These starting point classifications include judgments regarding what does and what does not count as an experience, an observation, an explanation, a valid argument, and so on. Any philosopher intending to reject intuition as an evidential source, Bealer argues, must provide a theory of justification that would license such a radical departure from our standard epistemological procedures. Providing such a theory of justification is impossible without invoking the starting points just mentioned; but such starting point judgments, Bealer claims, are invariably arrived at via intuition. It is therefore impossible to defend the rejection of intuition without appeal to intuition – and, it is argued, intuitions must therefore be evidence.

On the heterogeneity approach, however, this argument does not at all prove that intuitions must be evidence. If there are – as I claim – multiple processes underlying the production of intuitive judgment, such an argument at best shows that *epistemological* intuitions must be evidence. In fact, if epistemological cognition turns out to be underwritten by multiple processes, it may prove less – it may prove merely that classificatory intuitions about very basic epistemological categories must be counted as evidence. In either case, it cannot be used to defend the evidential status of intuitions in, e.g., the moral domain, nor the evidential status of ‘intuition’, full stop.

Another argument of this same ‘self-defeat’ type has been proposed by Joel Pust (2000). Pust’s target is what he calls ‘explanationist skepticism’ about intuitions. An example of such ‘skepticism’ is provided by an argument found in Harman (1977), which runs broadly as follows. Harman claims that the best explanation of our having the moral intuitions we do does not advert to the truth of the intuited moral propositions – instead, it adverts to various psychological facts. Because of this, we should not take the occurrence of moral intuitions as evidence for the truth of any moral facts corresponding to those intuitions. Pust argues that this argument relies on an ‘explanationist’ criterion of justification as a premise, which runs something like this: aside from propositions describing the occurrence of one’s observations and intuitive judgments, one is justified in believing only those propositions which form part of the best explanation of the occurrence of one’s observations and intuitive judgments. Because of its reliance on this criterion, Pust claims, Harman’s argument undermines itself.

The possibility for self-defeat, Pust claims, arises from the fact that the explanationist criterion of justification can itself only be justified by appeal to intuition. However, Pust further claims that intuition quite generally falls afoul of the explanationist criterion. Thus, the

explanationist criterion is deemed unjustified by its own lights. Arguments like Harman's fail, according to Pust, because they "treat intuiteds as evidence for a principle allowing only intuitings to count as evidence" (Pust 2000, 87). Further, the explanationist argument – indeed, any argument – relies on an ability to grasp an argument's validity – an ability grounded in intuition. "Such an appeal to intuition, again, however, violates the explanationist principle," (Pust 2000, 87).

The assumption seems to be that an explanationist like Harman must claim that *all* intuitive judgments are such that their contents are not invoked in the best explanation of their occurrence; however, Pust provides little argument as to why this should be so. The heterogeneity approach would, in fact, give Harman plenty of room to maneuver here – he could quite easily claim that the sorts of psychological facts that form the best explanation of the occurrence of our moral intuitions have little to do with the best explanation of the occurrence of our epistemological intuitions. On the heterogeneity approach, a debunking argument against moral intuitions no more affects the assumption that epistemological intuitions are generally best explained by the truth of their contents than it does the assumption that visual observations are generally best explained by the truth of *their* contents.²²

On the heterogeneity approach, whether Harman's argument is truly self-undermining depends on whether the best explanation of the occurrence of our *epistemological* intuitions fails to advert to their truth. Harman has claimed that the best explanation of our moral intuitions need only advert to certain psychological facts; however, he has not claimed that the same holds for epistemological intuitions. If the best explanation of our epistemological intuitions *does*

²² This should of course not be read as a claim that epistemological intuitions are, *in fact*, in better epistemological shape than moral intuitions – that remains open to investigation. It is merely an argument that one cannot *assume* that the various types of intuition have the same epistemological features; one cannot take Harman's claims to undermine intuition *simpliciter*, any more than one can take Pust's arguments to support intuition *simpliciter*.

advert to their truth, then there seems to be no trouble in applying the ‘explanationist’ criterion of evidence across the board – epistemological intuitions will pass the test, and thus the justification of the explanationist criterion itself by intuition will be not be self-undermining.

To be fair, the two self-defeat arguments just discussed do function perfectly well against what we might call ‘radical’ anti-intuitionism – the view that *no* intuitions are admissible as evidence. And it may be that a repudiation of radical anti-intuitionism was the authors’ only intent.²³ But in many cases, arguments such as these have been deployed against philosophers like the experimentalists discussed above, whose arguments against intuition continue to bear weight on methodological issues once they are divorced from any radical tendencies. The Weinberg, Nichols, and Stich findings on cross-cultural variation on Gettier cases, for instance, present a serious challenge to certain aspects of philosophical method even once the heterogeneity approach to intuition has been adopted – for they suggest that Gettier intuitions are sensitive to a feature (cultural background) which does not obviously affect the truth values of knowledge claims. It is not sufficient to dismiss such arguments by merely discrediting radical anti-intuitionism.

I have attempted to argue that the current dominant approach to philosophical methodology, which takes the evaluation of a priori methods to consist in an evaluation of the reliability of a single faculty known as ‘intuition’, is problematic. At the very least, a substantive argument must be offered as to why an assessment of reliability should be aimed at intuition generally rather than at several more narrowly-defined capacities. If the heterogeneity approach

²³ However, as mentioned above, Bealer does appear to explicitly conclude from his self-defeat argument that intuitions must be evidence. In his (1998) he writes that “in ‘The Incoherence of Empiricism’ I argued that [the rejection of intuition leads] one to epistemic self-defeat. In this chapter, I will just assume that these arguments succeed and that we cannot coherently deny that intuitions have evidential weight” (p. 214). In case one is tempted to interpret this as a *mere* rejection of radical anti-intuitionism, note that the very next sentence reads: “What explains why intuitions are evidence?” (p.214). Pust is less bold than Bealer in this regard, but does mention in a footnote that he is “inclined to see [the self-defeat argument] as providing one reason to trust intuition more than sense perception, namely, that without it, no coherent epistemology can be constructed” (Pust 2000, 110).

to intuition bears fruit, then is quite possible that the single-capacity view of intuition will turn out to simply be the wrong perspective for purposes of methodological critique. If this is the case, the very question of the evidential status of intuition may turn out to be irrelevant to debates over the status of traditional philosophical methodology.²⁴

²⁴ Thanks to Michael Devitt, Alvin Goldman, Joshua Knobe, Ernest Sosa, Stephen Stich, Brian Weatherson, and Jonathan Weinberg for helpful comments on earlier drafts of this paper.

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