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Natural Teleology in Hume's "Sceptical Solution"

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"Sceptical Solution of these Doubts" is a pivotal moment in Hume's first *Enquiry*: it provides his account of our warrant for inductive reasoning, and thereby explains how he can consistently move from his 'Sceptical Doubts' about induction to his eventual endorsement of inductive science at the *Enquiry*'s conclusion. However, it's hard to tell what account he means to offer: the text suggests various ideas about the source of induction's 'authority', including utility, unavoidability, and reliability; it's not clear how to fit them together. This paper argues that natural teleology forms the basis of Hume's 'Sceptical Solution'. Inductive reasoning is a product of 'custom', which has the natural function of reliably stocking our minds with true beliefs about the objects of 'common life and practice'. A piece of inductive reasoning is 'just' or warranted if and only if it's an example of custom functioning well. On this account, induction is unwarranted if we try to use it for investigating things that lie beyond the sphere of 'common life', such as the first cause of the universe. So, Hume's epistemology does not vindicate induction as a tool for natural theology. His 'Sceptical Solution' grounds his injunction to limit our enquiries to the objects of common life, an aspect of his 'mitigated scepticism'.

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Introduction

"Sceptical Solution of these Doubts" is a pivotal moment in Hume's first *Enquiry*. The preceding section, "Sceptical Doubts concerning the Operations of the Understanding", argues that every piece of inductive reasoning[1] involves 'a step taken by the mind, which is not supported by any argument or process of the understanding' (E 5.2/41).[2] But despite this 'sceptical' result, the *Enquiry* concludes by endorsing our use of induction in various sciences. Hume writes that inductive (or 'moral') reasoning 'forms the greater part of human knowledge' because 'only' this kind of reasoning allows us to 'prove[]' '[t]he existence of any being' (E 12.29/164). He therefore holds that 'history, chronology, geography, and astronomy', as well as 'politics, natural philosophy, physic, chymistry, *&c.*', are 'proper subjects of science and enquiry', insofar as their findings are supported by induction (E 12.26/163, 12.30–31/164–65). And he spares books containing inductive reasoning (or 'experimental reasoning concerning matter of fact and existence') from his libricidal fire (E 12.34/165).

How can Hume consistently move on from the 'sceptical' conclusion of the 'Doubts' to this eventual endorsement of induction? The answer must lie in his 'Sceptical Solution', which forms a textual bridge between the 'sceptical' argument of the 'Doubts' and the 'mitigated' scepticism of the *Enquiry*'s final section: the 'Doubts' anticipate the 'Solution' (compare E 4.20/36 with E 5.2/41–42); and the 'Solution', in turn, anticipates the 'mitigated scepticism' (compare E 5.2/41–42 with E 12.23–25/159–62).[3]

But what answer does Hume's "Sceptical Solution" provide? It's hard to tell. As we'll see, the text suggests various ideas about the source of induction's 'authority', including *utility*, *unavoidability*, and *reliability*. It's not immediately clear how to fit them together.

1. I use 'inductive reasoning' and 'induction' to refer to the type of reasoning that Hume variously calls 'reasoning concerning matter of fact' (E 4.4/26–27), 'moral reasoning' (E 4.18/35), and 'probable reasoning' (T 1.3.6.6/89, E 4.19/35), among other things. I use 'inference' and 'reasoning' interchangeably, as stylistic variants.

2. I cite Hume's works as follows. 'T' refers to Hume (2007a), followed by book, part, section, and paragraph numbers. 'A' refers to Hume's *Abstract* of the *Treatise* in Hume (2007a), followed by paragraph numbers. References to these works are followed by the corresponding page numbers in Hume (1978), set off by a slash mark. 'Sc' refers to "The Sceptic" in Hume (1985), followed by paragraph and page numbers. 'E' refers to Hume (2000), followed by section and paragraph numbers. 'M' refers to Hume (1999), followed by section and paragraph numbers. References to these two works are followed by the corresponding page numbers in Hume (1975), set off by a slash mark. 'P' refers to *A Dissertation on the Passions* in Hume (2007b), followed by section and paragraph numbers. 'L' refers to Hume (1932), followed by volume and page numbers. 'D' refers to Hume (2007c), followed by part and paragraph numbers, and by the corresponding page numbers in Hume (1947), set off by a slash mark.

3. For similar points about "Sceptical Solution" and how it fits into the overall structure of the *Enquiry*, see Qu (2020: 28, 95, 212–17).

Here, I'll argue that *natural teleology* forms the basis of Hume's 'Sceptical Solution'. Inductive reasoning is a product of 'custom', which has the *natural function* of reliably stocking our minds with true beliefs about the objects of 'common life and practice'. A piece of inductive reasoning is 'just' or *warranted* if and only if it's an example of custom *functioning well*. This norm is *epistemic* because—given what custom's function is—it concerns the reliable acquisition of true beliefs and avoidance of false ones. Hume endorses induction as a tool for investigating the objects of 'common life and practice' on the grounds that reasoning inductively about such objects *is* an example of custom functioning well. However, induction does not enjoy this kind of warrant if we try to use it for investigating objects that lie beyond the sphere of common life, such as the first cause of the universe. So, Hume's epistemology does not vindicate induction as a tool for natural theology. The limitation of our enquiries to the objects of common life is an aspect of his mitigated scepticism.

I'm not the first to propose that Hume's epistemology is based on natural teleology.[4] But other advocates of this proposal only sketch it briefly and, insofar as they provide textual evidence, it derives from Hume's early *Treatise of Human Nature* (1739–40).[5] Here, I aim to develop a version of this proposal in convincing detail and to show that Hume's later *Enquiry* and his other mature works provide significant support for it.[6]

In the literature to date, more energy has been spent *attacking* than defending this proposal. Frederick Schmitt (1992: 69–72; 2014: 111–13) and Kevin Meeker (2006; 2013: chap. 7) give detailed arguments against it. Schmitt's objections focus on the *Treatise*. He notes (2014: 2n3) that he sees 'stunning differences'

4. Other advocates of the proposal that Hume's *epistemology* is based on teleological notions of proper functioning include Edward Craig (1987: 81), Nicolas Wolterstorff (1996: 166n6), and Sean Greenberg (2008: 728–29). Relatedly, Chuck Goldhaber (2021) provides a detailed, textually sensitive and historically informed reading of key passages from the Conclusion of Book 1 of the *Treatise*, according to which Hume's views about scepticism involve teleological notions of mental health and proper functioning. However, Goldhaber (2021: 818–19) defers the question of how considerations of mental health and proper functioning bear upon the *epistemic* evaluation of beliefs and belief-forming processes. Jessica Spector (2003) argues that Hume's *moral psychology* invokes natural teleology. She bases her case partly on Hume's analogy between his philosophical project and 'anatomy'. Since his project includes a theory of the understanding, as well as a moral psychology, Spector's case has broader implications. I develop this point in Section 4, below.

5. For example, both Wolterstorff (1996: 166n6) and Greenberg (2008: 728) cite T 1.4.4.1/225, where Hume distinguishes two senses of reasoning 'naturally', one of which is plausibly teleological. For helpful discussion of this passage, see Schmitt (1992: 69), who ultimately rejects the kind of reading that Wolterstorff and Greenberg favour. Craig (1987: 81) provides no citations in support of his proposal, claiming instead that an epistemology based on natural teleology is 'nowhere to my knowledge stated, but very clearly implied' in Hume's texts.

6. Whilst this paper was under review, I learned that Karl Schafer (forthcoming) has independently been working on teleology in Hume's philosophy of mind. I think our views complement each other, and I look forward to engaging with Schafer in future work on this topic.

between the *Treatise* and the *Enquiry*. So, it's not clear that he'd object to my views here, which concern the *Enquiry*. In contrast, Meeker's most important objection focuses on the *Enquiry*. However, it does not refute my reading of this text—or, at least, so I'll argue.

I'll proceed as follows. Section 1 summarizes Hume's 'Sceptical Doubts' and the task for a 'Sceptical Solution of these Doubts'. Section 2 surveys the various ideas about the source of induction's 'authority' that we find in "Sceptical Solution". Sections 3 and 4 develop my proposal that natural teleology is the basis of Hume's 'Sceptical Solution': I provide evidence for my proposal from "Sceptical Solution" itself (Section 3) and from the *Enquiry* more broadly (Section 4). Lastly, Section 5 replies to Meeker's objections.

§1 Preliminaries

Section 4 of the *Enquiry*, "Sceptical Doubts concerning the Operations of the Understanding", introduces the questions that Hume will address in this and the following section, "Sceptical Solution of these Doubts" (E 4.3/26, 4.4/26–27, 4.14/32). It defends a 'negative answer' to the deepest of these questions (E 4.15/32). And it frames the task for the 'Sceptical Solution', which will provide Hume's positive answer (E 4.20/36). Before we turn to Hume's 'Sceptical Solution', let's briefly examine these elements of his 'Doubts'.

Hume's Questions in "Sceptical Doubts" and "Sceptical Solution"

Hume's questions in these sections concern 'matters of fact', that is, contingent propositions that cannot be known by intuition or demonstration, our two sources of *a priori* knowledge (E 4.2/25–26).[7] In particular, his questions concern those matters of fact that lie 'beyond the present testimony of our senses, or the records of our memory', that is, those that we do not observe, and cannot remember having observed, to be true; let's call them *unobserved matters of fact*, for short (E 4.3/26).

Hume launches his investigation with a question about 'evidence': 'what is the nature of that evidence, which assures us of' any unobserved matter of fact (E 4.3/26)? Later, when taking stock of his progress, he reformulates this question in terms of 'reasoning': 'What is the nature of all our reasonings concerning

7. For valuable analysis of Hume's distinction between 'relations of ideas' and 'matters of fact', see Millican (2017).

matter of fact?' (E 4.14/32; see also E 4.4/26). Presumably, he thinks it obvious that the 'evidence' in question is *inferential*. (Note that the question concerns *our* reasonings, specifically; I return to this point in Section 5, below.)

Hume answers this first question quickly: 'the nature of all our reasonings concerning matter of fact' is that they are 'founded on the relation of cause and effect' (E 4.4/26–27, 4.14/32). But this answer invites a further question: 'What is the foundation of all our reasonings and conclusions concerning that relation [*sc.*, causation]?' (E 4.14/32; see also E 4.5/27). Hume argues that we cannot have any substantive *a priori* knowledge of causal relations (E 4.5–13/27–32). Therefore, his answer to his second question is that all our 'reasonings and conclusions' about causation are founded on 'experience' (E 4.14/32)—specifically, experience of a regularity, whereby one type of object or event has often followed another (E 4.16/32–34).

This line of argument brings Hume to a question he considers deeper and more difficult than those he has addressed so far. He has argued that all our inferences concerning unobserved matters of fact are 'conclusions from experience'. But '[w]hat is the foundation of all conclusions from experience?' (E 4.14/32). This deeper question occupies Hume for the rest of "Sceptical Doubts" and "Sceptical Solution".

Before we consider Hume's answer to this deeper question, let's pause to consider what his questions mean. In particular, how are we to understand their key term, 'foundation', and the related phrase 'founded on'? Don Garrett (2015: 182) claims that Hume often uses the phrase 'founded on' with a 'causal rather than normative' sense, and argues that it has this causal sense here. In Garrett's view, then, Hume's questions concern 'how the mind actually performs basic probable inferences . . . and not . . . whether a normative justification for them exists'.[8]

However, two features of the text suggest that, in this context, the sense of 'founded on' is not *purely* causal. First, in the paragraph that introduces this phrase, Hume writes,

> If we anatomize all the other reasonings of this nature [that is, all 'reasonings' to unobserved matters of fact], we shall find, that they are **founded on** the relation of cause and effect, and that this relation is either near or remote, direct or collateral. Heat and light are collateral effects of fire, and the one effect **may justly be inferred** from the other. (E 4.4/27, boldface added)[9]

8. Garrett uses 'probable inference' as I use 'inductive reasoning'.

9. In the same paragraph, Hume gives the example of reasoning from 'the hearing of an articulate voice and rational discourse in the dark' to assurance of 'the presence of some person' (E 4.4/27). In the *Treatise*, he gives the same example to illustrate reasoning 'justly and naturally'

Here, it seems, the 'foundation' of a piece of reasoning is that in virtue of which the reasoner proceeds 'justly' in moving from her premises to her conclusion—or, as I shall say, that which *warrants* her inference[10]—if anything does. So, the sense of 'founded on' here seems to be at least partly evaluative, and hence not purely causal.

Second, in "Sceptical Solution", Hume claims that reasoning to unobserved matters of fact 'must' begin from 'some fact . . . present to your memory or senses':

> If I ask, why you believe any particular matter of fact, which you relate, you must tell me some reason; and this reason will be some other fact, connected with it. But as you cannot proceed after this manner, *in infinitum*, you must at last terminate in some fact, which is present to your memory or senses; or must allow that your belief is entirely without foundation. (E 5.7/46)

Suppose that 'foundation' had a purely causal sense here. Then the last quoted sentence would say: when you recount the reasoning that led you to believe an unobserved matter of fact, you must either 'terminate in some fact, which is present to your memory or senses' or else 'allow that your belief is entirely without' *a cause*. But this claim would be patently false, both by Hume's lights and in fact. Suppose that someone believes an unobserved matter of fact, but then discovers that she cannot construct a chain of reasoning *to* that belief *from* any matter of fact that she observes or remembers observing. This discovery would not force her, in any sense, to concede that her belief had no *cause*. On the contrary, she may well infer that her belief was caused by some process other than reasoning, such as wishful thinking or indoctrination. At most, her discovery would force her to concede that she had no *source of warrant* for her belief, and hence that this belief was *unwarranted*. And there's textual evidence that this concession is the one that Hume has in mind here. The corresponding passage of the *Treatise* says that 'without the authority of either the memory or senses our whole reasoning wou'd be chimerical and without foundation' (T 1.3.4.2/83). Here, the relevant sense of 'without foundation' seems to be *without 'authority'*, that is, *unwarranted*.

(T 1.4.4.1/225), in the seemingly teleological sense of 'naturally' that inspired Wolterstorff's (1996) and Greenberg's (2008) proper functionalist readings of his epistemology.

10. Following Tyler Burge (2003: 504–5) and Peter J. Graham (2012: 450, 451–54), I use 'warrant' to express the genus, epistemic good standing. Within this genus, Burge and Graham distinguish two species, justification and entitlement. I use 'warrant' to avoid prejudging the issue of which species of epistemic good standing Hume means to express by his use of the term 'justly'. (Note that my usage differs from that of Plantinga [1993], who uses 'warrant' to express the property that, when added to true belief, yields knowledge. I take no stand on whether having a true belief that is warranted, in my sense, suffices for having knowledge.)

I therefore surmise that, in "Sceptical Doubts" and "Sceptical Solution", the phrases 'foundation' and 'founded on' have a partly evaluative meaning: a foundation is a *source of warrant*; the foundation of an inference, specifically, is the source of our warrant for moving from the premises to the conclusion. I will gladly concede to Garrett that the meaning of these phrases is partly causal, as well as partly evaluative: for Hume, an inference derives warrant from its causal source, if indeed it is warranted.

On this reading, Hume's deepest question in "Sceptical Doubts"—'What is the foundation of all conclusions from experience?'—means, *what is the source of our warrant (if we have any)*[11] *for moving from observed matters of fact to an unobserved one, on the basis of experience?* The rest of "Sceptical Doubts" and "Sceptical Solution" address this question.

Hume's Negative Answer

The rest of "Sceptical Doubts" aims to defend 'a negative answer': namely, that 'even after we have experience of the operations of cause and effect, our conclusions from that experience are *not* founded on reasoning, or any process of the understanding' (E 4.15/32). For Hume, our 'understanding' is a mental faculty whose operations include sensation, intuition, demonstrative reasoning and inductive reasoning.[12] Hume's negative answer is that our inductive reasoning does not derive warrant from any of these operations, including, of course, inductive reasoning itself.

Why not?[13] Briefly, Hume argues that our inductive reasoning is 'founded on' the 'supposition' that 'the future [or unobserved] will resemble the past [or observed]' (E 4.21/37). In other words, such reasoning derives its warrant—assuming it has any—from our inductive policy of extrapolating observed regularities to unobserved cases. To serve as a 'foundation' for such reasoning, our understanding would need to provide us with some prior warrant for this 'sup-

11. Beebee (2006: 8, 36, 54–56) and Loeb (2006: 330–31, 328) claim that Hume assumes throughout "Sceptical Doubts" (or the corresponding portion of the *Treatise*) that some of our inductive inferences are warranted. I agree that Hume concludes, in "Sceptical Solution", that some are. But I think it's an open question, in "Sceptical Doubts", whether or not any are.

12. The claim that our 'understanding's' operations include these four is, I think, uncontroversial: note that both of Hume's works focused on the understanding—Book 1 of the *Treatise*, entitled "Of the Understanding", and the first *Enquiry* itself—include discussion of all four operations, and that "Sceptical Doubts concerning the Operations of the Understanding", in particular, addresses all four, as I explain below. For debate about whether the faculty that Hume calls 'reason' is identical to the 'understanding' in this broad sense, see Garrett (2014) and Millican (2014).

13. In this paragraph, I'm indebted to the analyses of Hume's argument in Millican (2002; 2012) and Qu (2020: chap. 3).

position' or inductive policy. But no process of our understanding can do so. *The senses* cannot, for 'past *Experience* . . . can be allowed to give *direct* and *certain* information of those precise objects only, and that precise period of time, which fell under its cognizance', but the 'supposition' outstrips those 'objects' and that 'period of time' (E 4.16/33). Nor can *intuition*, for there is no 'intuitive' step *from* what past experience does tell us—namely, that a conjunction has been observed among types of 'objects' or 'events'—*to* the 'supposition' (E 4.16/34). Nor can *demonstrative* reasoning, for the 'supposition' cannot be 'proved' from an observed conjunction 'by any demonstrative argument or abstract reasoning *á priori*' (E 4.18/35). Nor can 'reasoning concerning matter of fact' or inductive reasoning. For, as Hume has already argued, all our inductive reasoning derives its own warrant from the 'supposition', and hence cannot be the source of our warrant for the 'supposition' itself (E 4.19/35–36).

The Task for Hume's 'Sceptical Solution'

In "Sceptical Doubts", Hume argues that the 'supposition . . . that the future will be conformable to the past' *is* the source of our warrant—if we have any—for our reasoning to the unobserved; and he argues that our understanding *is not* the source of our warrant for this 'supposition'. If correct, this argument leaves us with two options. *Either* the supposition enjoys warrant from some source other than our understanding, *or* the supposition has no warrant from any source—in which case, it cannot confer any warrant upon our inductive reasoning, and hence such reasoning is unwarranted.

Hume is not ready to conclude that our 'supposition' has no warrant from any source. He will first try to identify a source other than our understanding. Towards the end of "Sceptical Doubts", he frames the task for his 'Sceptical Solution' as follows:

> [I]t may surely be allowed a philosopher to have so much curiosity at least, to examine the principle of human nature, which gives this mighty authority to experience, and makes us draw advantage from that similarity, which nature has placed among different objects. (E 4.20/36)

The task is to identify 'the principle of human nature' that gives 'authority' to experience, that is, that warrants our policy of extrapolating observed regularities to unobserved cases. This passage anticipates the second paragraph of "Sceptical Solution", where Hume recapitulates his task in similar terms:

> Though we should conclude, for instance, as in the foregoing section, that, in all reasonings from experience, there is a step taken by the mind, which is not supported by any argument or process of the understanding; there is no danger, that these reasonings, on which almost all knowledge depends, will ever be affected by such a discovery. If the mind be not engaged by argument to make this step, it must be induced by some other principle of equal weight and authority; and that principle will preserve its influence as long as human nature remains the same. What that principle is, may well be worth the pains of enquiry. (E 5.2/41–42)

Hume aims to identify a 'principle' of human nature whose 'weight and authority' are 'equal' to that of 'the understanding', and which can therefore serve as the source of our warrant for the 'supposition'—and hence, as the ultimate source of our warrant to reason inductively from the observed to the unobserved, on the basis of experience.[14]

Let's now turn to "Sceptical Solution", where Hume identifies this 'principle' and explains how it provides us with this warrant.

§2 An Embarrassment of Riches

Which 'principle of human nature' explains and warrants our 'supposition . . . that the future will resemble the past'? And how come this 'principle' has 'weight and authority', so that it can provide this warrant? Hume's answer to the first question jumps off the page: 'This principle is CUSTOM or HABIT' (E 5.5/43); 'Custom . . . is that principle alone, which renders our experience useful to us, and makes us expect, for the future, a similar train of events with those which have appeared in the past' (E 5.6/44). Hume explains that, by speaking of 'custom', he means the 'principle of human nature' whereby exposure to a regularity causes a 'propensity' to expect more of the same for the future (or, more broadly, the unobserved), where the operation of this 'principle' involves no 'reasoning or process of the understanding' (E 5.5/43); he later calls it an 'instinct or mechanical tendency' (E 5.22/55). Because this mental 'principle' or 'mechani[sm]' has 'weight and authority' equal to our understanding's, it warrants our 'supposition'—our policy of 'expect[ing], for the future, a similar train of events with those which have appeared in the past'—and hence warrants inductive reasoning 'founded on' this supposition.

14. For the view that "Sceptical Solution" aims to explain our warrant for reasoning inductively, see Qu (2020: chap. 4). For the contrary view, see Garrett (2015: 182).

But what of the second question: how come this principle has 'weight and authority'? Here, it's much harder to discern Hume's answer. Or, rather, it's hard to discern any single answer. For we seem to find an embarrassment of riches. "Sceptical Solution" points to several features of 'custom' that might give it 'weight and authority', chief among them *utility*, *unavoidability*, *reliability*, and *natural function*. Unsurprisingly, different scholars emphasize different features, leading to various readings of the text.

Utility

When Hume introduces 'custom' as the 'principle' responsible for our 'supposition' of uniformity, he emphasizes its *utility*:

> Without the influence of custom . . . we should never know how to adjust means to ends, or to employ our natural powers in the production of any effect. There would be an end at once of all action, as well as of the chief part of speculation. (E 5.6/44–45)

At the end of the section, he reiterates that without the influence of 'custom', we could 'never . . . adjust means to ends, or employ our natural powers, either to the producing of good, or avoiding of evil' (E 5.21/55). Later in the *Enquiry*, Hume returns to this theme: when discussing brute animal minds, he notes that 'the whole conduct of life depends' upon 'the experimental reasoning . . . which we possess in common with beasts' (E 9.6/108).

According to some scholars, Hume thinks that custom's utility is the source of its 'authority'.[15] On this reading, the value of forming beliefs about the unobserved via induction is ultimately *ethical* rather than *epistemic*. For Hume, personal merit 'consists altogether in the possession of mental qualities, *useful* or *agreeable* to the *person himself* or to *others*' (M 9.1/268). Insofar as 'custom' is useful, it's a component of personal merit; and insofar as custom moves us to form beliefs about the unobserved via induction, we form these beliefs in a meritorious way. Some scholars connect these points to Hume's claims that *wisdom* 'forms a considerable part of personal merit' because it's useful to its possessor (M 6.16/240, M App4.6/316), and that '[a] wise man . . . proportions his belief to the evidence' (E 10.4/110).[16] Having wisdom, in Hume's sense, constitutively involves the operations of 'custom'—without which we could not 'proportion[]'

15. For examples, see Owen (1999: chap. 9) and Ridge (2003). Ridge focuses on the *Treatise of Human Nature*, but Owen (1999: 218) finds the ethical account of 'the warrant of reason' to be more fully developed in the *Enquiry*.

16. For example, see Owen (1999: 212, 220–23).

our belief 'to the [inductive] evidence'—and so these operations must be part of personal merit, if wisdom is.

Unavoidability

Both before and after identifying 'custom' as the source of our 'supposition' of uniformity, Hume suggests that its operations are part of human nature, and therefore 'unavoidable': because of our 'nature', we cannot prevent custom from operating in our minds. Before identifying the 'principle' that explains our 'supposition', he says that—whatever this 'principle' turns out to be—it 'will preserve its influence as long as human nature remains the same' (E 5.2/41–42). Shortly after concluding that this principle is 'custom', he writes:

> [H]aving found, in many instances, that any two kinds of objects, flame and heat, snow and cold, have always been conjoined together; if flame or snow be presented anew to the senses, the mind is carried by custom to expect heat or cold, and to *believe*, that such a quality does exist, and will discover itself upon a nearer approach. This belief is the necessary result of placing the mind in such circumstances. It is an operation of the soul, when we are so situated, as unavoidable as to feel the passion of love, when we receive benefits; or hatred, when we meet with injuries. All these operations are a species of natural instincts, which no reasoning or process of the thought and understanding is able, either to produce, or to prevent. (E 5.8/46–47)

In the *Enquiry*'s final section, Hume seems to mitigate this claim about 'unavoidability': he now says that 'custom' is merely 'difficult', rather than *psychologically impossible*, 'to resist' (E 12.22/159). Nevertheless, his discussion of 'Pyrrhonian scepticism' suggests that we cannot resist it for long: a 'Pyrrhonian' sceptic tries to suspend all her beliefs about the unobserved, and hence to resist the influence of custom, but 'Nature is always too strong for principle' (E 12.23/160).

In the *Dialogues*, Philo recapitulates this passage from the *Enquiry*'s final section, but suggests (as in "Sceptical Solution") that it's *impossible*, not merely difficult, for us to resist the influence of custom on our inferences and beliefs:

> To whatever length any one may push his speculative principles of scepticism, he must act, I own, and live, and converse like other men; and for this conduct he is not obliged to give any other reason, than the absolute necessity he lies under of so doing. If he ever carries his speculations farther than this necessity constrains him . . . (D 1.9/134)

When read in isolation, the first quoted sentence might suggest that the 'absolute necessity' in question concerns only *action*, rather than *inference* and *belief*. However, the following sentence suggests that some *cognitive* states and processes are also necessitated: 'this necessity constrains' us to engage in some 'speculations', as well as in actions. Later, Philo indicates that these necessitated speculations include 'our vulgar methods of reasoning', about which he says 'we . . . are entirely guided by a kind of instinct or necessity in employing them' (D 1.10/135). This passage alludes to Hume's theory in the *Enquiry* that 'custom or a certain instinct of our nature' 'leads us into' inductive reasoning (E 12.22/159).

According to some scholars, custom's *unavoidability*—or, at least, the great *difficulty* of resisting it—is the source of its authority.[17] On this kind of view, we are warranted in drawing inductive inferences, as a result of custom, because we cannot help doing so. This basic idea can be developed in different ways. For example, custom's unavoidability might be considered a source of either *pragmatic* or *epistemic* 'authority', or both. And the relevant kind of 'authority' might be construed as a source of *warrant* for one's inferences, or, alternatively, as a source of an *excuse* or *exemption* from needing any warrant for them.[18]

Reliability

The closing paragraphs of "Sceptical Solution" highlight two more features of 'custom' that could plausibly explain its 'weight and authority': its *reliability* and its *natural function*. Concerning *reliability*, Hume notes that 'custom' has 'effected' a 'correspondence' 'between the course of nature and the succession of our ideas' (E 5.21/54–55). In other words, custom produces inductive inferences whose conclusions by and large 'correspond to' actual matters of fact, and hence are true.[19] A paragraph later, he reiterates that custom is 'an instinct, which carries forward the thought in a correspondent course to that which she has established among external objects' (E 5.22/55).

Some scholars see custom's *reliability* as the source of its 'authority'. This basic idea has been developed along both *internalist* and *externalist* lines. To a first approximation, an *internalist* about epistemic warrant holds that a belief or

17. Kemp Smith's (1941) theory of 'natural belief' is a classic example of this kind. For recent readings that attach normative significance to the natural unavoidability of custom, but otherwise differ from Kemp Smith's, see Millican (2002) and Avnur (2016).

18. For a distinction between justifications (a species of warrants), excuses, and exemptions, see Avnur (2016). On Avnur's reading, the natural unavoidability of a belief-forming process affords us an *excuse* for forming beliefs via that process. Avnur contrasts his reading with P. F. Strawson's (1985), on which this natural unavoidability instead affords us an *exemption*.

19. Hume's mature works contain no definition of *truth*. However, Books 2 and 3 of the *Treatise* define contingent truth as a kind of 'agreement' or correspondence (T 2.3.10.2/448, 3.1.1.9/458).

inference is warranted only if the subject can tell, by reflection alone, that (some or all of) the factors that warrant it obtain.[20] *Externalism* is the negation of internalism. In the Hume literature, some scholars argue that Hume accepts a form of *internalist reliabilism* on which 'custom' has authority (and hence can warrant inductive inferences) insofar as we have evidence of its reliability.[21] Others argue that he accepts a form of *externalist reliabilism*, on which 'custom' has authority simply in virtue of its being reliable, whether or not the subject has evidence (or can otherwise tell by reflection) that custom is reliable.[22]

Natural Function

As well as reliability, the closing paragraphs of "Sceptical Solution" introduce another feature of custom that could—and, I will argue, *does*—explain its 'weight and authority': namely, its *natural function*.

The penultimate paragraph describes the 'correspondence' that we've noted, in connection with reliability, as 'a kind of pre-established harmony' (E 5.21/54), suggesting design or purpose. No doubt, this line is partly meant as a joke at the expense of Leibniz, whose theory of reason Hume has rejected in "Sceptical Doubts" and "Sceptical Solution".[23] But the joke has a serious point. Hume goes on to explain that the 'correspondence' in question has an *end*: it is 'necessary to the subsistence of our species, and the regulation of our conduct, in every circumstance and occurrence of human life', and hence '[t]hose, who delight in the discovery and contemplation of *final causes*, have here ample subject to employ their wonder and admiration' (E 5.21/55).

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20. Alternative versions of internalism say that a belief can be warranted only by *other warranted beliefs of the subject*; or, only by *other mental states of the subject*. For helpful discussion, see Pappas (2017).

21. Qu (2020) defends a sophisticated reading of this kind. More precisely, Qu distinguishes *antecedent justification* from *consequent justification*. A mental faculty has *antecedent justification* by default. A mental faculty enjoys *consequent justification* only if empirical investigation yields evidence of its reliability.

22. For example, Dauer (1980), Costa (1981), and Schmitt (1992; 2014) read Hume in this way. Beebee (2006: 71–74) may be another example. However, I'm not sure whether Beebee means to ascribe *internalist* or *externalist reliabilism* to Hume. She writes, of reasoning to the unobserved ('causal reasoning'), that 'its justification is based on its reliability' (2006: 74), which may be construed as a statement of *externalist reliabilism*. However, she also writes that 'Hume offers a reliabilist justification of causal reasoning' (2006: 73), and that 'it is an empirical claim that our inferential habits are in harmony with the course of nature' (2006: 73–74). These points about *offering* or *claiming* a justification seem more at home in an *internalist reliabilist* framework like that of Qu (2020), discussed in the footnote above.

23. For the relation between Hume's and Leibniz's views on reasoning, see Kail (2007) and (2020).

In the section's final paragraph, Hume elaborates, with reference to 'the wisdom of nature', which has made 'custom' the source of our inductive inferences *in order to* secure 'the subsistence of all human creatures':

> I shall add, for further confirmation of the foregoing theory, that, as this operation of the mind, by which we infer like effects from like causes, and *vice versa*, is so essential to the subsistence of all human creatures, it is not probable, that it could be trusted to the fallacious deductions of our reason, which is slow in its operations; appears not, in any degree, during the first years of infancy; and at best is, in every age and period of human life, extremely liable to error and mistake. It is more conformable to the ordinary wisdom of nature to secure so necessary an act of the mind, by some instinct or mechanical tendency, which may be infallible in its operations, may discover itself at the first appearance of life and thought, and may be independent of all the laboured deductions of the understanding. As nature has taught us the use of our limbs, without giving us knowledge of the muscles and nerves, by which they are actuated; so has she implanted in us an instinct, which carries forward the thought in a correspondent course to that which she has established among external objects; though we are ignorant of those powers and forces, on which this regular course and succession of objects totally depends. (E 5.22/55)

'Custom' is the 'instinct or mechanical tendency' responsible for the 'supposition' on which our inductive reasoning is founded. Here, Hume suggests that this 'instinct' has a natural function: reliably to populate our minds with true beliefs about objects in as-yet unobserved regions of space and time—or, as he says, to 'carr[y] forward the thought in a correspondent course to that which [nature] has established among external objects'—so that we may act in ways that conduce to our survival, and to the survival of our species.[24]

24. Similarly, Schmitt (2014: 112) argues that, for Hume, causal inference has 'the extended veritistic natural function of reliably producing true beliefs'. (Schmitt calls this function 'extended' because he thinks that, for Hume, the natural functions of belief-producing operations derive from those of beliefs, and hence that belief-producing operations have natural functions only in an 'extended sense'; see below.) However, Schmitt (2014: 112–13) goes on to argue that Hume could not explain justified belief in terms of this extended natural function on pain of circularity, because 'the extended natural function of causal inference includes an epistemic function, one that refers to a justifying operation' (2014: 113). This further argument involves two key claims that Schmitt attributes to Hume: (1) the natural functions of belief-forming operations derive from those of beliefs (Schmitt 2014: 112), and (2) belief has the epistemic natural function of foresight, i.e. of being produced by a justifying mechanism (Schmitt 2014: 109 and 111). Schmitt's evidence for attributing these claims to Hume derives only from the *Treatise*. I see no comparable evidence that Hume accepts them in the *Enquiry*. As I read "Sceptical Solution" and the *Enquiry* more broadly, Hume treats the natural functions of our mental *faculties* as primary and non-derivative, contrary

This natural function could explain why custom operates with 'weight and authority' when it produces our 'supposition' of uniformity. When 'custom' works in a way that's conducive to fulfilling its natural function, it *works as it should*. In our environment, reasoning based on the 'supposition' of uniformity does reliably stock our minds with true beliefs about the unobserved. So, when 'custom' moves us to reason in this way, it works as it should. These teleological considerations might explain our warrant for supposing uniformity, and for reasoning based on this supposition: we are warranted because this supposition, and this reasoning, are examples of an inference-producing mechanism working as it should.

Conclusion of §2

We asked to what custom owes the 'weight and authority' that allows it to warrant inductive reasoning. We've now seen that "Sceptical Solution" suggests at least four seemingly different answers. What should we make of this variety? We might conclude that Hume embraces a kind of epistemic pluralism: 'custom' has diverse features—utility, unavoidability, reliability, and a natural function—that each independently confers 'weight and authority' upon it. But I think this conclusion too hasty. I will propose and defend a reading on which custom's *natural function* has a kind of primacy over the other factors we've considered here.

§3 Natural Teleology in "Sceptical Solution"

Hume's remarks about the 'wisdom of nature', in "Sceptical Solution's" closing paragraphs, suggest the following picture. For our individual survival, and for the survival of our species, each of us needs a stock of largely true beliefs about the behaviour of ordinary objects in nearby regions of space and time, beyond those we've observed. Above all, we need true beliefs about *the future*, for that's when we'll act on our present desires and intentions. (Induction's importance for *action* explains why Hume so often speaks of 'the future', instead of the unobserved more generally, and why he often calls induction 'moral reasoning', using 'moral' to mean '*sufficient to justify* practical *certainty*'.)[25] In order to provide us

to (1); and he does not explicitly attribute natural functions to beliefs, rather than belief-forming faculties, which casts doubt on whether he'd accept (2). Even if the Hume of the *Enquiry* does accept (2), this commitment would not sustain Schmitt's objection, given that—as I take it—he does not accept (1).

25. See entry 7 under 'moral, adj.' in the *Oxford English Dictionary*.

with such beliefs, nature has made us creatures of 'custom'. In other words, nature has so built us that, when we observe a regularity, we expect more of the same: we 'proceed upon the supposition, that the future will be conformable to the past' (E 4.19/35). Our faculty of custom functions *properly*, or *as it should*, when we respond to observed regularities in this way, 'proceed[ing] upon' this supposition. Custom has 'weight and authority'—in other words, it is a source of warranted inferences—because it has this natural function. Reasoning *warrantedly* to the unobserved is a matter of custom's functioning as it *should*.

This picture of our warrant for inductive inference is *externalist* in several ways.[26] For example, this picture allows that a creature can reason warrantedly, whether or not the creature can tell by reflection alone that her reasoning is an example of custom's functioning properly. Indeed, this picture allows that a creature can reason warrantedly even if she lacks the ideas of *custom* and *proper functioning*, and hence cannot even entertain the thought that her reasoning is an example of custom's functioning properly. And it may turn out that, on this picture, warrant for inductive reasoning does not supervene on internal states of the reasoner: if my 'Swampman' doppelgänger's faculties have no natural functions, then *his* inductive reasoning is *not warranted*, even though (let's suppose) mine is *warranted* and our internal states are the same.[27]

On the picture that I've sketched, custom's *natural function* explains its ability to produce warranted inferences. So, this function has a kind of explanatory priority over the other factors we've canvassed as potential sources of its 'weight and authority': *utility*, *unavoidability*, and *reliability*. However, each of these factors has a place in my picture. So, I can explain why Hume should highlight each of them when presenting his 'Sceptical Solution'.

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26. Meeker (2006; 2013: chap. 7) argues that Hume's epistemology is *internalist*. I think that Meeker goes wrong by relying too heavily on "Sceptical Doubts" and the corresponding passages of the *Abstract*, when reconstructing Hume's own epistemological views. In "Sceptical Doubts", Hume argues for the 'negative answer' that our warrant for inductive reasoning does not ultimately derive from 'reasoning, or any process of the understanding'. A warrant that *was* derived from 'reasoning' or some 'process of the understanding' *would* be internal to the reasoner, because the 'process of the understanding' that provided this warrant *would* be accessible by reflection alone. So, in this section, Hume does focus on internal forms of warrant. Meeker takes Hume to hold that warrant for inductive inference would have to take one of these internal forms, and hence to conclude that we have no warrant for inductive inference. But as I read Hume, that's not his view: in "Sceptical Solution", he attributes an external form of warrant to inductive inferences about ordinary objects in nearby regions of space and time. For this way of reading "Sceptical Doubts" and "Sceptical Solution", I'm indebted to Louis Loeb (2006; 2008).

27. Davidson's (1987: 443) 'Swampman'—an intellectual descendant of Hume's 'Adam' (A 11–14/650–52, E 4.6/27)—is a physical duplicate of a human adult, created fully-formed by a cosmic accident. For discussion of 'Swampman' in connection with a proper functionalist reading of Hume, see Meeker (2006: 130). For discussion in connection with contemporary proper functionalist epistemology, see Graham (2012: 466–68).

Let's examine these other factors, starting as before with *utility*. In "Sceptical Solution's" penultimate paragraph, Hume connects custom's utility with its natural function. Custom's function is reliably to produce true beliefs about the unobserved or, as Hume says, reliably to produce a 'correspondence' between 'the course of nature' and 'the succession of our ideas'. This 'correspondence' is 'necessary to the subsistence of our species' because of its great practical utility: without it, 'we should never have been able to adjust means to ends, or employ our natural powers, either to the producing of good, or avoiding of evil' (E 5.21/54–55), and so we could not survive for long. Nature has given us a faculty for reliably producing true beliefs about the unobserved *because* such beliefs are useful—indeed, essential—in keeping us alive.

Given the intimate relation between custom's function and its utility, shouldn't we say that its function is *promoting survival (of the individual and the species)*, rather than *reliably producing true beliefs about the unobserved*? I don't think so.[28] Compare the case of biological functions. In a way, all such functions ultimately concern the goals of survival and reproduction: not every *causal role* counts as a *function*; rather, a causal role played by an organ counts as a function only insofar as it promotes these goals. However, we do not infer that every organ of the body has the same function, namely *promoting survival and reproduction*. Instead, we assign different functions to different organs: for example, we say that the heart's function is to circulate the blood, the lungs' function to take in oxygen, and so on. So, although custom's function shares this kind of relation to the goals of survival and reproduction, we need not infer that its function is simply to promote these goals. Just as we assign distinctive functions to the heart and lungs, we may assign a distinctive function to custom: namely, that of reliably producing true beliefs about the behaviour of ordinary objects in the unobserved regions of space and time that concern us.

That's how utility fits into my picture. What about *unavoidability*? When Hume introduces this feature of custom's operations, he suggests that their 'unavoidab[ility]' consists in their being immune to interference from 'the understanding': they are 'unavoidable' in that 'no reasoning or process of the thought and understanding is able, either to produce, or to prevent' them (E 5.8/46–47). At the end of "Sceptical Solution", Hume explains why it matters that custom's operations should exhibit this kind of unavoidability. '[R]eason', or the understanding, is a source of 'fallacious deductions' that is—'at best'—'extremely liable to error and mistake' (E 5.22/55). If custom's operations could be prevented by reasoning, then they would often be prevented by *bad* reasoning, in circumstances when they would otherwise have fulfilled their natural function. So, like reliability, unavoidability has an important place in the picture I've drawn. But

28. The reasoning that follows is indebted to Graham (2012: 473–74).

unavoidability is not a separate source of 'weight and authority', independent of custom's natural function. Rather, it's a feature of custom that fits it to perform this function well.

Lastly, what of *reliability*? For our survival, we need a stock of *largely true* beliefs about the unobserved. Custom's function is to provide us with such a stock of beliefs. In other words, its function is *reliably* to produce true beliefs about the unobserved. The function of *reliably doing A* differs from the function of (merely) *doing A*. To see this point, consider sperm, which *have* the function of fertilizing an ovum, but which *do not have* the function of *reliably* fertilizing an ovum.[29] Sperm do their job perfectly well if they succeed only two or three in a trillion times. Custom differs from sperm in this respect. If only two or three in a trillion of my beliefs about the unobserved were true, I wouldn't live long. So, reliability has an important place in the picture I've drawn. Custom's reliability is not a separate source of 'weight and authority'. Rather, reliability is part of custom's natural function.[30]

Have I just understated reliability's role: on the picture I've sketched, isn't it reliability, rather than natural function, that's the ultimate source of custom's 'weight and authority'?[31] Imagine a faculty whose function is producing *false* beliefs about the unobserved, and imagine that it performs this function well. Would this faculty have 'weight and authority', such that its operations are warranted inferences? If the answer is *no*, then it may seem that proper functioning confers no authority, and hence that custom owes its authority to its reliability, not to its natural function.

However, as we've seen in connection with utility, not every causal role counts as a function; we do not speak of a 'function' when part of a mind or body has effects detrimental to the organism and the species. For example, we do not say that the appendix has the function of becoming blocked and swelling; and we would not say so, even if everybody reliably developed appendicitis. A mental faculty that produced mostly false beliefs about the unobserved would be no less fatal than a burst appendix. So, although we can imagine a faculty whose *causal role* is to produce mostly false beliefs about the unobserved, we cannot imagine a faculty whose *function* is to do so.

But what if the faculty produced only *beneficial* false beliefs? For example, suppose it produced only beliefs that exaggerate the subject's abilities. These beliefs might give the subject confidence to take on more ambitious projects than she would pursue, and spur her on to greater successes in these projects than

29. I owe this example to Graham (2012: 460), who credits it to Ruth Millikan.

30. This paragraph is indebted to Graham (2012: 460–61), who develops and defends a theory of the kind I'm attributing to Hume here, using Millikan's example as I do.

31. My thanks to an anonymous referee for pressing this question, and to Maggie O'Brien for help answering it.

she would enjoy, if she had only true beliefs about her own powers. In this case, we may say that the faculty had the *function* of producing false beliefs about the subject's abilities. However, in this case, we may also speak of the faculty's having a kind of 'weight and authority': prudentially speaking, the subject *ought to* have these false beliefs, and her faculty *works well*—as it prudentially speaking *should*—in producing them. So, this case is not a counterexample to my view.[32]

Note that, in this case, the faculty's 'weight and authority' is *prudential* and not *epistemic*. On the picture I've sketched, a faculty's authority derives from its natural function. Custom's authority counts as *epistemic* because its function concerns the *reliable* production of *true* beliefs. Reliability is not the ultimate source of custom's authority; but it is the source of the *epistemic* character of this authority.

On the reading I'm proposing, "Sceptical Solution" does not give a pluralist view on which diverse features of custom—its utility, unavoidability, reliability and natural function—make separate contributions to its 'weight and authority'. Instead, its *natural function* has pride of place. Custom is a source of warranted inferences because it has a natural function: reliably to stock our minds with true beliefs about the behaviour of ordinary objects in nearby, but as-yet unobserved, regions of space and time. A piece of inductive reasoning is warranted if and only if it's an example of custom *performing this function well*. However, the other features of custom highlighted in "Sceptical Solution" are importantly related to this function. Custom's role of *reliably producing true beliefs* only counts as a natural function because of its *utility* in promoting the reasoner's survival. Custom's *unavoidability*—its immunity to interference from fallible reasoning—enables it to perform this function well. And custom's *reliability* is part of its function, which is *reliably* to produce true beliefs, not merely sometimes to produce them.

But why should we accept this reading? We can already see one reason in its favour. It allows us to find order in Hume's various claims on behalf of custom: that its operations are useful, unavoidable, and so on. It shows us the

32. There's a further kind of case, where a faculty produces false beliefs that are beneficial *insofar as they contribute to the acquisition of knowledge*. For example, suppose a faculty produced beliefs that are false in that they exaggerate the subject's cognitive abilities. These beliefs might move the subject to pursue more ambitious *intellectual* projects than she otherwise would, leading her to acquire evidence that she would not otherwise have had, and thereby to achieve more and (let's suppose) more important knowledge than she otherwise would have. Should we say that this faculty, when functioning well, has epistemic authority? I think no. Better to say that it has *zetetic* authority, i.e., authority pertaining to the norms of *enquiry*. The faculty's proper functioning contributes to the subject's success in enquiry, hence its *zetetic* authority; but its own operations do not, in themselves, involve the acquisition of epistemically warranted beliefs, hence its lack of *epistemic* authority. Thanks to Maggie O'Brien for alerting me to the possibility of this kind of faculty, and for valuable discussion. I owe the distinction between epistemic and zetetic value, and the term 'zetetic', to Jane Friedman (2020), who provides independent reasons for thinking that these two kinds of value diverge.

unity in their seeming diversity. I'll now provide further support for this reading, by showing how it helps us to make sense of Hume's overall project in the first *Enquiry*.

§4 Natural Teleology in the First *Enquiry*

At the outset, I noted that "Sceptical Solution" plays a crucial role in the overall project of the first *Enquiry*. Let's now consider this broader project. I'll present evidence that Hume conceives it in terms of natural teleology. Our reading of "Sceptical Solution", which accords a central place to teleology in the form of natural functions, helps us to understand the overall project and how "Sceptical Solution" contributes to it.

Natural Fitness or Adaptation in Hume's Theory of the Understanding

In Section 1 of the *Enquiry*, "Of the Different Species of Philosophy", Hume proposes to examine 'the understanding' in order to determine which topics we may profitably investigate using this faculty, and which we may not. He sees this project as liberating. By showing that some topics are off-limits to human science, he will free us from the 'fruitless efforts of human vanity' in trying to investigate these topics, and from the 'craft [that is, craftiness] of popular superstitions', which co-opt the 'metaphysical jargon' associated with these 'fruitless efforts', so as to give their doctrines a bogus 'air of science and wisdom' (E 1.11–12/11–13). To this end, Hume proposes to 'enquire seriously into the nature of human understanding', with a view to giving 'an exact analysis of its powers and capacity' (E 1.12/12).

The body of the *Enquiry* provides this 'exact analysis'. The closing paragraphs of the twelfth and final section, "Of the Academical or Sceptical Philosophy", then provide its results: a list of 'the proper subjects of science and enquiry', and the proper methods for investigating them (E 12.26/163; for the list, see E 12.27–33/163–65); and an exhortation to 'commit . . . to the flames' any volume that does not engage with these subjects by means of these methods (E 12.34/165). The 'limitation of our enquiries' to these 'proper subjects' is one kind of 'mitigated scepticism' that Hume endorses in this section of the *Enquiry* (E 12.25–26/162–63).

When asking his question about 'the proper subjects of science and enquiry' in Section 1, and again when answering it in Section 12, Hume frames it in terms of *fitness* and *adaptation*. In Section 1, he writes:

> The only means of freeing learning, at once, from these abstruse questions, is to enquire seriously into the nature of human understanding, and shew, from an exact analysis of its powers and capacity, that it is **by no means fitted for** such remote and abstruse subjects. (E 1.12/12, boldface added)

Our understanding is 'fitted for' the investigation of some subjects, but not for others.

Similarly, in Section 12, when formulating the kinds of 'mitigated scepticism' that he recommends, Hume writes:

> Another species of *mitigated* scepticism, which may be of advantage to mankind, and which may be the natural result of the Pyrrhonian doubts and scruples, is the limitation of our enquiries to such subjects as are **best adapted to** the narrow capacity of human understanding. (E 12.25/162, boldface added)

This paragraph provides the context for Hume's list of 'the proper subjects of science and enquiry' (E 12.27–33/163–65) and his injunction to incinerate books on other subjects (E 12.34/165). The 'proper subjects' are those that are 'best adapted to' our understanding; the others, those that are not 'best adapted'.

Hume's views about natural fitness and adaptation are not restricted to 'the understanding'. He takes similar views about our faculty of 'taste' or 'sentiment'. In his essay "Of the Standard of Taste", he writes that this faculty is also naturally fitted for the appreciation of some sorts of objects, but not others. Some 'beauties' are 'naturally fitted' to act on our faculty of taste, so as 'to excite agreeable sentiments' (ST 11/233); again, 'certain qualities in objects' are 'fitted by nature to produce these particular feelings' of pleasure or displeasure (ST 16/235).

How should we interpret Hume's talk of 'fitness' and 'adaptation' in connection with the understanding and taste? "Of the Standard of Taste" explains the relation of natural 'fitness' in teleological terms. Some kinds of objects are naturally supposed to produce pleasurable sentiments in us, others to produce displeasurable ones. We're sometimes pleased by naturally displeasurable objects or not pleased by naturally pleasurable ones, but in these cases our faculties *malfunction*:

> Some particular forms or qualities, from the original structure of the internal fabric, are calculated to please, and others to displease; and if they fail of their effect in any particular instance, it is from some apparent defect or imperfection in the organ. A man in a fever would not insist on

> his palate as able to decide concerning flavours; nor would one, affected with the jaundice, pretend to give a verdict with regard to colours. In each creature, there is a sound and a defective state; and the former alone can be supposed to afford us a true standard of taste and sentiment. (ST 12/233)

By analogy, we might interpret Hume's talk of the understanding's 'fitness' for investigating certain kinds of objects, but not others, in terms of its distinctive function. The understanding's natural function is to investigate the former kinds of objects, but not the latter.

To provide further support for this proposal, let's consider how Hume tries to identify the subjects to which the understanding is 'fitted'.

Natural Functions in Hume's 'Mental Geography'

As we've seen, Hume proposes to figure out which subjects the understanding is 'fitted for', and which it is not, by giving 'an exact analysis of its powers and capacity' (E 1.12/12). He explains that a part of this 'exact analysis' will consist of a 'mental geography, or delineation of the distinct powers and parts of the mind' (E 1.13/13). The relevant 'powers and parts' of the mind include its 'faculties', and hence include 'the understanding' itself (E 1.14/13–14). So, among other things, Hume's 'mental geography' will tell us what sets apart the understanding from other mental faculties.

When Hume introduces the task of providing a 'mental geography', he notes that some distinctions among the mind's 'powers and faculties' are 'obvious' and 'fall within the comprehension of every human creature'; his examples include the distinction 'between the will and [the] understanding' (E 1.14/13–14). But he goes on to say that other distinctions are not so 'obvious': some are 'finer and more philosophical', and hence more 'difficult to be comprehended' (E 1.14/14). This passage recalls Hume's distinction in the *Enquiry*'s opening paragraphs between two kinds of 'moral philosophy, or the science of human nature' (E 1.1–2/5–6): an 'easy and obvious' kind, which he likens to 'painting', and an 'accurate and abstruse' kind, which he likens to 'anatomy' (E 1.3/6, 1.8/9–10). Drawing the 'finer and more philosophical distinctions' among mental faculties is a task for the 'accurate and abstruse' or 'anatom[ical]' kind of philosophy. An anatomist of the body distinguishes its parts based on their functions. No anatomy textbook will discuss the mereological sum of the upper half of the heart and the lower half of the lungs. Why not? Because this part of the body has no distinctive function—it makes no distinctive contribution to the survival and reproductive fitness of the whole organism. By analogy, we might expect that a Humean 'anato-

mist' or 'geograph[er]' of the mind will distinguish its 'parts and powers' on the basis of their natural functions.[33]

Hume's discussion of 'mental geography' provides support for this conjecture. He says that some philosophers—that is, some practitioners of the 'accurate and abstruse' kind of philosophy—have recently succeeded in identifying some of the 'finer' distinctions among mental faculties (E 1.14/14). Early editions of the *Enquiry* included a footnote with examples of these successes, credited to Hutcheson and Butler. According to this note, Hutcheson's success was to distinguish between 'the understanding' or 'That Faculty, by which we discern Truth and Falshood' and 'that [Faculty] by which we perceive Vice and Virtue'—faculties that, according to Hume, 'had long been confounded with each other' (E 1.14n, 1748 and 1750 editions only). Thanks to Hutcheson, Hume says, we can now see that 'Morality . . . is entirely relative to the Sentiment or mental Taste of each particular Being', and hence that the perception of vice and virtue 'ought not to be clas'd with the Operations of the Understanding, but with the Tastes or Sentiments'.[34]

When Hume glosses 'the Understanding' as 'That Faculty, by which we discern Truth and Falshood', he cannot plausibly mean that every operation of the understanding *actually does* lead to 'discern[ment]' of truth and falsehood. 'Discern' is a factive term, but—as Hume well knows—operations of the understanding sometimes lead to false judgments.[35] More plausibly, he means that operations of the understanding are *supposed to* lead to true judgments of 'Truth and Falshood', that is, lead to judging of what's true *that it is true* and of what's false *that it is false*. Producing such judgments is the understanding's *natural function*.

This footnote has an ancestor and a descendant, which provide support for this reading. Its ancestor is a passage in Hume's 1742 essay "The Sceptic", where the essay's fictional narrator characterizes 'the operation of reasoning'—which is an operation of the understanding—in terms of its characteristic *goal*:

> In the operation of reasoning, the mind does nothing but run over its objects as they are supposed to stand in reality, without adding any thing to them, or diminishing any thing from them. If I examine the Ptolomaic and Copernican systems, I endeavour only, by my enquiries, to know the real situation of the planets; that is in other words, I endeavour to give them, in my conception, the same relations, that they bear towards each other in the heavens. (Sc 13/164)

33. I owe these ideas about Hume's analogy with anatomy to Jessica Spector (2003: 152–53).

34. As this example of 'mental geography' shows, part of the 'mental geograph[er's]' task is to classify mental events and processes ('operations') according to the faculty (or faculties) responsible for them.

35. For 'judgment' as the product of the understanding or 'reason', see P 5.1/24.

It's characteristic of 'reasoning' that it aims at a 'conception' that is true, or that matches 'reality'[36] ('I endeavour to give them, in my conception, the same relations, that they bear towards each other in the heavens'). The narrator goes on to distinguish 'the operation of reasoning' from the discernment of 'the qualities of *beautiful and deformed*, *desirable and odious*'. In this operation, unlike in reasoning, 'the mind is not content with merely surveying its objects, as they stand in themselves'; rather, the mind adds to the objects, by feeling a distinctive 'sentiment of delight or uneasiness, approbation or blame' (Sc 14/164). Here, the narrator seems to be distinguishing the understanding (the faculty responsible for 'the operation of reasoning') from 'that [Faculty] by which we perceive Vice or Virtue' at least partly in terms of their distinctive *goals*: the understanding aims to represent (or conceive) the world as it is; the faculty responsible for moral evaluation does not.

That passage was the ancestor of the first *Enquiry*'s footnote on recent successes in 'mental geography'. The descendant appears in *An Enquiry concerning the Principles of Morals* (1751), hereinafter *the moral* Enquiry. After publishing this work, Hume eliminated the footnote from the first *Enquiry*. Why? Because it's superseded by parts of the new work.[37] In the moral *Enquiry*, Section 1 and Appendix 1 revisit the distinction between 'the understanding'—or, as Hume often calls it here, 'reason'—and the faculty of 'sentiment' or 'taste'. Appendix 1 presents Hume's considered view of these faculties and their roles in moral thought. It culminates in a passage that distinguishes these faculties with reference to their distinctive 'offices' or *functions*:[38]

> Thus, the distinct boundaries and offices of *reason* and *taste* are easily ascertained. The former conveys the knowledge of truth and falsehood: The latter gives the sentiment of beauty and deformity, vice and virtue. The one discovers objects as they really stand in nature, without addition or diminution: The other has a productive faculty, and gilding or staining all natural objects with the colours, borrowed from internal sentiment, raises, in a manner, a new creation. Reason, being cool and disengaged, is

36. "The Sceptic's" narrator equivocates about the aim of reasoning. At first, he suggests that it's *knowledge* ('I endeavour . . . to know the real situation of the planets'). But he then suggests that it's merely *truth* ('I endeavour to give them, in my conception, the same relations, that they bear towards each other in the heavens'). Perhaps he thinks that the primary aim is truth, but that we must pursue knowledge in order to accomplish this aim, along the lines suggested by Williams (1978: chap. 2).

37. Here, I focus on how the moral *Enquiry* supersedes the first paragraph of the footnote, on Hutcheson. The footnote's second paragraph, on Butler, is plausibly superseded by Appendix 2 of the moral *Enquiry*, "Of Self-Love". I thank Peter Millican for valuable discussion of the footnote and its fate.

38. I thank Don Garrett for help with Hume's talk of 'offices' here.

> no motive to action, and directs only the impulse received from appetite or inclination, by showing us the means of attaining happiness or avoiding misery: Taste, as it gives pleasure or pain, and thereby constitutes happiness or misery, becomes a motive to action, and is the first spring or impulse to desire and volition. From circumstances and relations, known or supposed, the former leads us to the discovery of the concealed and unknown: After all circumstances and relations are laid before us, the latter makes us feel from the whole a new sentiment of blame or approbation. (M App1.21/294)

This passage, anticipated in "The Sceptic" and in early editions of the first *Enquiry*, gives part of Hume's own 'mental geography': his considered 'delineation' of the faculty of understanding or 'reason' and the faculty of 'sentiment' or 'taste'. It confirms that Hume means to distinguish these faculties based on teleological considerations: their distinctive 'offices', that is, their *functions*. In the case of 'reason' or understanding, these functions include producing judgments that match reality—that represent objects 'as they really stand in nature, without addition or diminution'. (Compare "The Sceptic's" claim that astronomical reasoning aims 'to give [the planets], in my conception, the same relations, that they bear towards each other in the heavens'.)

The same paragraph also suggests that a faculty's function generates a 'standard' of correctness for the operations of that faculty:

> The standard of the one [sc., reason], being founded on the nature of things, is eternal and inflexible, even by the will of the Supreme Being: The standard of the other [sc., taste], arising from the internal frame and constitution of animals, is ultimately derived from that Supreme Will, which bestowed on each being its peculiar nature, and arranged the several classes and orders of existence. (M App1.21/294; compare ST 12/233, quoted above)

A faculty functions *correctly* insofar as it operates in a way that conduces to fulfilling its function. Because the understanding (or 'reason') and taste have different kinds of functions, they answer to different kinds of 'standards'.

Hume's 'mental geography', which distinguishes mental faculties with reference to their different natural functions, gives us a handle on his claims that our faculty of understanding is 'fitted' to investigate some subjects but not others, and that some 'qualities of objects' are naturally fitted to elicit particular (pleasurable or painful) responses from our faculty of 'taste' or 'sentiment'. The understanding and taste have natural functions. The understanding's function is reliably to furnish our mind with true beliefs about some sorts of objects, but

not about others. The understanding operates incorrectly—trespassing beyond its natural 'boundaries and offices' (M App1.21/294)—when we try to investigate objects of the latter sorts. Taste's function is to shape our desires, by 'giv[ing] pleasure' in response to some sorts of objects, and 'giv[ing] . . . pain' in response to others (M App1.21/294). This faculty malfunctions when we experience, for example, pleasurable sentiments in response to the latter sorts of objects.

Hume's 'Sceptical Solution' and His 'Mitigated Scepticism'

So far, we've seen that the understanding has natural 'offices' or *functions* and, relatedly, is subject to natural 'boundaries'. Its function is reliably to stock our minds with true beliefs about some sorts of objects, but not about others. It works improperly when we try to investigate the latter sorts of objects. But which sorts of objects belong in each category: which sorts can we fruitfully investigate using the understanding, and which sorts should we refrain from investigating? "Sceptical Solution" anticipates Hume's answer:

> The academics always talk of . . . confining to very narrow bounds the enquiries of the understanding, and of renouncing all speculations which lie not within the limits of common life and practice. (E 5.1/41)

> [T]his [sceptical] philosophy . . . endeavours to limit our enquiries to common life . . . (E 5.2/41)

The *Enquiry*'s final section presents this answer more fully, as one of two kinds of 'mitigated scepticism' that Hume endorses (E 12.25/162):[39]

> The *imagination* of man is naturally sublime, delighted with whatever is remote and extraordinary, and running, without controul, into the most distant parts of space and time in order to avoid the objects, which custom has rendered too familiar to it. A correct *Judgment* observes a contrary method, and avoiding all high and distant enquiries, confines itself to common life, and to such subjects as fall under daily practice and experience; leaving the more sublime topics to the embellishments of poets and orators, or to the arts of priests and politicians. (E 12.25/162)

39. The other kind of 'mitigated scepticism' consists in adopting 'a degree of doubt, and caution, and modesty . . . in all kinds of scrutiny and decision', even those limited to the objects of common life (E 12.24/161–62). This kind of mitigated scepticism is also anticipated by "Sceptical Solution": 'The academics always talk of doubt and suspense of judgment, of danger in hasty determinations . . .' (E 5.1/41).

Hume goes on to explain that these 'high and distant' or 'sublime' topics, which are off-limits to human enquiry, include 'the origin of worlds, and the situation of nature, from, and to eternity' (E 12.25/162).

In Hume's considered view, then, the understanding is 'fitted' to investigate the subjects that concern us in the course of 'common life'. These subjects would presumably include the behaviour of ordinary, macroscopic objects, including other animals and people, in the regions of space and time that we do, or might come to, inhabit—for these are the kinds of things that we must take into account, when acting or planning a course of action. They do not include extraordinary things, such as the origin of the universe, or things at great spatial or temporal distances from us ('the situation of nature, from, and to eternity').

Why should we restrict our enquiries to these subjects of 'common life and practice'? Our reading of "Sceptical Solution" provides a ready answer. Our actions are guided by beliefs about unobserved matters of fact, and the inferences by which we acquire these beliefs are products of 'custom'. Our faculty of 'custom' has a natural function: reliably to stock our minds with true beliefs about the unobserved matters of fact on which the success or failure of our common-life actions depends, and thereby to promote our survival. An inference to the unobserved is 'just' or warranted if and only if it's an example of custom working *well*, that is, working *as it should*. Custom works *as it should* only when drawing inferences about the objects of 'common life and practice'. It's *these inferences*, and only these inferences, on which our survival depends. Our survival does not depend upon inferences about extraordinary events or spatiotemporally remote objects. So, producing beliefs about these kinds of things is *not* part of custom's natural function. So, inferences to such beliefs are *not* examples of custom's working well, or as it should. And so, on our reading, such inferences are not 'just' or warranted. The kind of 'mitigated scepticism' that consists in restricting one's enquiries to the subjects of 'common life and practice', which Hume endorses in Section 12 of the *Enquiry*, follows straightforwardly from the proper functionalist epistemology that we've found in "Sceptical Solution".

Notice that, in the course of the first *Enquiry*, Hume has turned teleology against the theist. Advocates of *a posteriori* natural religion, like Cleanthes in Hume's *Dialogues*, appeal to natural teleology—the 'curious adapting of means to ends, throughout all nature' (D 2.5/143)—as the basis for an inductive inference to the design hypothesis: that there is a powerful, intelligent deity who designed and created the observable universe. In "Sceptical Solution", Hume points out that 'custom'—the faculty ultimately responsible for inductive reasoning—is itself an example of the 'curious adapting of means to ends'. Custom is adapted to the objects of 'common life and practice'. It is not adapted to the extraordinary and remote kinds of objects, such as deities and acts of cosmic creation, about which the theist tries to reason. So, we cannot warrantedly draw

inductive inferences about such objects. And so, the theist's own view that 'all nature' exhibits a 'curious adapting of means to ends' *undercuts* the 'just'-ness or warrant of his inductive inference to the design hypothesis. The theist cannot *both* warrantedly assert his premise (about means-end adaptation throughout nature) *and* warrantedly draw his inference to intelligent design.

§5 Objections and Replies

In his article "Was Hume a Proper Functionalist?", Kevin Meeker argues that Hume does not accept an epistemology based on the proper functioning of our mental faculties.[40] Meeker's conception of a 'proper functionalist' epistemology differs from mine in a couple of ways. First, Meeker (2006: 123, 124–26) understandably focuses on Alvin Plantinga's (1993) version of a proper functionalist epistemology.[41] However, some parts of Plantinga's view are not essential to this kind of epistemology, and I have not attributed them to Hume. For example, I have not said that Hume understands functions in terms of 'design plans',[42] or that he equates knowledge with warranted true belief.[43] Second, Meeker (2006: 120–21) contrasts 'naturalistic' with 'sceptical' readings of Hume, and seems to assume that a proper functionalist reading would be 'naturalistic' and hence not 'sceptical'. But my reading is both naturalistic and sceptical: I have argued that Hume's appeal to natural functions in "Sceptical Solution" serves to support the *mitigated* scepticism that he endorses at the end of the first *Enquiry*. However, Meeker's key points stand or fall independently of these differences. I will present his objections in my own way, to make clear that they target the reading I've proposed.

Meeker (2006: 123) presents some initial 'doubts' about the kind of reading I favour, and then gives 'a more definitive reason for rejecting' it. I will respond to each in turn.

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40. Some of these arguments later reappear in chap. 7 of Meeker's 2013 book *Hume's Radical Scepticism and the Fate of Naturalized Epistemology*. However, I will focus on the earlier article because it contains more objections to the specific kind of reading that I favour. Meeker's book chapter contains further, more general arguments against attributing any kind of externalist epistemology to Hume. I sketch my response to these more general arguments in note 26, above.

41. 'Understandably', both because Plantinga's was the best-developed version when Meeker wrote, and because Wolterstorff (1996: 166n6) had recently suggested that Hume's epistemology is an ancestor of Plantinga's.

42. This understanding is not shared by all epistemologists who conceive some species of warrant in terms of proper functioning. For examples of alternatives, see Burge (2003) and Graham (2012).

43. For a proper functionalist epistemology that does not include this equation, see Graham (2012).

Initial Doubts

Meeker's 'doubts' (2006: 126) stem from Hume's famous warning about reasoning from 'is' to 'ought':

> In every system of morality, which I have hitherto met with, I have always remark'd, that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when of a sudden I am surpriz'd to find, that instead of the usual copulations of propositions, *is*, and *is not*, I meet with no proposition that is not connected with an *ought*, or *ought not*. This change is imperceptible; but is, however, of the last consequence. For as this *ought*, or *ought not*, expresses some new relation or affirmation, 'tis necessary that it shou'd be observ'd and explain'd; and at the same time that a reason shou'd be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it. (T 3.1.1.27/469)

On my reading, does Hume flout his own warning, by reasoning *from* descriptive propositions about the functions of our mental faculties *to* normative propositions about how those faculties should operate?

I see three reasons to think not. First, it's not clear that the warning is 'Hume's own', in the relevant sense: I have focused here on Hume's mature views, but the warning about 'is'-to-'ought' reasoning appears only in his 'juvenile' *Treatise*, not in his mature works. Second, it's not clear that Hume means entirely to proscribe reasoning from 'is' to 'ought': taken literally, his warning says only that inferential steps from 'is' to 'ought' must be 'observ'd and explain'd', not that they're always forbidden (T 3.1.1.27/469–70).[44] Third, even if Hume does mean to proscribe reasoning from 'is' to 'ought', it's not clear that propositions about the functions of our mental faculties *are* 'is'-propositions in the relevant sense: perhaps the concept of a function is itself normative, as Jessica Spector (2003: 157) proposes in connection with Hume's account of proper functioning.[45]

44. For a classic argument that Hume does not mean entirely to proscribe 'is'-to-'ought' reasoning, see MacIntyre (1959). For a recent counterargument, see Qu (2019). Meeker (2006: 126) acknowledges that it's controversial how to read the 'is'-to-'ought' passage, which at least partly explains why he presents these considerations as (mere) 'doubts', separately from his 'more decisive' objection.

45. Spector (2003: 157) suggests that in the case of propositions about functions, 'the "is" itself is normative (even if minimally so)'.

Meeker (2006: 127–28) considers and criticizes Spector's proposal, partly on the basis of a 1739 letter to Frances Hutcheson, where Hume writes:[46]

> I cannot agree with your Sense of *Natural*. Tis founded on final Causes; which is a Consideration, that appears to me pretty uncertain and unphilosophical. For pray, what is the End of Man? Is he created for Happiness or for Virtue? For this Life or the next? For himself or his Maker? Your definition of *Natural* depends on solving these Questions, which are endless, & quite wide of my Purpose. (L 1:33)

Based on this passage, Meeker (2006: 128) suggests that Hume would reject proper functionalist epistemologies by asking, rhetorically, 'Are we "designed" for happiness or truth? Your view depends on solving this question, which is interminable and beyond my purpose'. However, Hume's question to Hutcheson—and Meeker's adapted version of it—concern the function of *a whole human being*, not the function of *parts or powers of* human beings, such as biological organs or mental faculties. Hume may mean to deny that a whole human being has a function, while accepting that some of its parts or powers have functions. (Notice how much less impressive his objection to Hutcheson would be, if it focused on the attribution of functions to the heart or lungs.)[47] The epistemology that I have attributed to Hume assigns functions to mental faculties, but not to a human being as a whole. So, this epistemology is consistent with Hume's objection to Hutcheson.[48]

Meeker (2006: 128) anticipates some of these points, and concedes that his 'doubts' are not decisive against my kind of reading.[49] He therefore presents a separate and 'more definitive' objection, to which I now turn.

More Definitive Objection

Meeker's 'more definitive' objection concerns Hume's argument in Part i of "Sceptical Doubts". According to Meeker (2006: 128–30; see also 2013: chap. 7, §3), we

46. Meeker (2006: 127) also objects that Spector's proposal simply relocates the problem about 'is'-to-'ought' reasoning, because normative claims about our faculties' functions must be derived from purely descriptive claims about humankind. However, it's not clear to me (i) whether Spector accepts this view about the derivation of such claims; nor (ii) if she does, whether a proper functionalist epistemologist must accept it; nor (iii) if they must, whether they cannot adequately 'observe and explain' the 'is'-to-'ought' step that this derivation would involve. I therefore pass over this objection here.

47. For a similar line of response to Meeker, see Schmitt (2014: 103–4n15).

48. For a similar view about this letter to Hutcheson, see Spector (2003: 157).

49. For another response to Meeker's 'initial doubts', which complements my remarks here, see Schmitt (2014: 103–4n15).

should not attribute a proper functionalist epistemology to Hume because doing so would 'sabotage' this crucial argument. Why? I understand Meeker to reason as follows. In Part i of "Sceptical Doubts", Hume argues that there are no *a priori* warranted inferences to the unobserved (E 4.6–11/27–30). However, it's distinctly conceivable and thus (by Hume's lights) possible[50] for human beings to have a mental faculty with the following function: reliably to form true beliefs about unobserved causes and effects, even without experience. According to a proper functionalist epistemology, if this faculty works well, then its operations are inferences that *are* warranted but *are not* founded on experience; Meeker (2006: 132) suggests that they would be 'a type of *a priori* causal inference'. So, if Hume accepts this kind of epistemology, he must accept that such inferences are possible, contrary to his argument in Part i of "Sceptical Doubts". Meeker infers that Hume does not accept a proper functionalist epistemology.[51]

Recall that Hume's question in "Sceptical Doubts" concerns *our* reasoning: 'What is the nature of all **our** reasonings concerning matter of fact?' (E 4.14/32, boldface added). So, the key question here is: are warranted inferences to the unobserved, not founded on experience, possible *for us, given the faculties we actually have?* Suppose that Hume accepts a proper functionalist epistemology, as I've argued. Then, to show that we cannot draw such inferences, he needs to show that we don't have the kind of faculty Meeker describes, that is, one whose function is reliably to form true beliefs about unobserved causes and effects, without experience. I consider this Meeker's main challenge to my reading: either find, in the *Enquiry*, an argument that we have no such faculty; or concede that there's a serious lacuna in Hume's 'Sceptical Doubts'.

I think this challenge can be met: we *can* find, in the *Enquiry*, an argument that we do not have this kind of faculty. Suppose we did have it. Then our minds would be so built that, upon first encountering a particular event of a given type, we'd form a belief in an as-yet unobserved event of another type—one that is, in fact, causally related to the first.[52] For example, upon first experiencing a token of the type *firelight*, we'd form a belief in an as-yet unobserved token of the type *heat*. But "Sceptical Doubts" gives empirical evidence that our minds are *not* so built with respect to all types of causes and effects that we encounter. For exam-

50. For the view that distinct conceivability implies (some kind of) possibility, see for example E 2.4/18 and E 4.2/25–26.

51. I thank Kevin Meeker for help understanding his 'more definitive' objection and for help with my reply to it.

52. Given Hume's Copy Principle—that 'all our ideas . . . are copies of our impressions' (E 2.5/19)—this mental transition could occur only if (i) we'd *already* experienced (had an impression of) the second type of event, or (ii) we could construct this idea from others that we had, or (iii) our idea of the first type of event somehow contained an idea of the second. Hereinafter, I'll suppress this point for ease of exposition.

ple, upon first experiencing the contact of two marble surfaces, we do not actually form a belief in their adhesion (E 4.7/28).

Meeker might reply that, for all Hume shows, our minds may nevertheless be so built with respect to some ordinary types of causes and effects: say, with respect to the causation of motion by impact, of heat and light by combustion, or of nourishment by bread.

But I think Hume gives reasons to reject even this more modest hypothesis about us. Suppose our minds were so built. What might explain the mental transitions we would then make, for example, the transition from our first impression of firelight to a belief in heat?

One possible answer is that nothing further explains these mental transitions: it's simply a primitive psychological law that *if we have an impression of firelight, then we form a belief in an unobserved instance of heat*. Of course, there'd have to be many such laws: at least two for every kind of causally-related pair that activated the supposed mental faculty. For example, there'd need to be a law governing inference from firelight to heat, and another governing inference from heat to firelight; a law governing inference from present impact to future motion, and another governing inference from present motion to recent impact; and so on. However, Hume regards simplicity and systematicity—that is, unifying diverse, specific regularities by subsuming them under a smaller number of more general laws—as virtues that provide reasons to accept a theory that has them: as he puts it in "Sceptical Doubts", 'the utmost effort of human reason is, to reduce the principles, productive of natural phænomena, to a greater simplicity, and to resolve the many particular effects into a few general causes' (E 4.12/30–31).[53] But the answer we're now considering, with its many specific, primitive laws, would be complicated and unsystematic. So, Hume does give reason to reject this answer.

The other possible answer is that these mental transitions are explained by some underlying psychological mechanism (some 'secret springs and principles', E 1.15/14) whose operations are governed by a smaller number of more general laws.[54] But what could these mechanisms be? I can think of two accounts that don't appeal to magic, and Hume gives reasons to reject both of them.

53. "Sceptical Solution" reminds us of this point when Hume proposes to 'trace up these phænomena, to principles still more general' (E 5.13/50). See also the Introduction to the *Treatise*: 'we must endeavour to render all our principles as universal as possible, by tracing up our experiments to the utmost, and explaining all effects from the simplest and fewest causes' (T 0.8/xvii). For helpful discussion of Hume on theoretical simplicity, see Qu (forthcoming).

54. In personal correspondence, Don Garrett suggests that the mechanisms might be neurological rather than psychological: for example, our brain might be so built that, when we first experience firelight, our 'animal spirits' go and rummage its cells for an idea of heat to 'rouze up' (see T 1.2.5.20/60–61). But this answer concedes that there's no *psychological* explanation for the mental transitions that Meeker envisages. And so, Hume's *psychological* theory would be burdened with

First, in the *Dialogues*, Philo invites us to imagine that we could 'penetrate into the intimate nature of bodies', enabling us 'to see why it was absolutely impossible, they could ever admit of any other disposition' (D 9.10/191)—that is, to perceive a particular necessary connection between an observed cause (or effect) and its unobserved effect (or cause). We can imagine a psychological mechanism that would exploit such perceptions in order to bring about the kinds of mental transitions that Meeker envisages. For example, upon first perceiving an impact between two bodies, we would perceive its necessary connection with motion; and a psychological mechanism could use this perception as the basis for producing a belief in motion, before we observed any. However, "Sceptical Doubts" argues that our actual faculties ('our reason') do not provide this kind of insight into 'the intimate nature of bodies': without experience, we can have no knowledge of a 'tye or connexion' between any pair of events (E 4.10/29–30). So, insofar as Meeker's reply appeals to this kind of psychological mechanism, Hume does give reason to reject it.

Second, our minds might use a kind of 'brute force' method to produce these mental transitions. That is, our minds might come into existence already programmed with instructions about how to respond to each type of cause that we may encounter. These instructions may include, for example,

> *given an experience of firelight, produce a belief that heat is present* (E 4.4/27),
>
> *given an experience of a billiard ball on a collision course with another, which is stationary and unobstructed, produce a belief that the balls will collide and the second will start to move* (E 4.8/28),
>
> . . . and so forth.

Suppose we had a mental faculty pre-programmed with such instructions, and suppose it functioned well. Then, the first time we experienced firelight, we would find ourselves believing that heat is present, even though we lacked knowledge of a necessary connection between these particular instances of firelight and heat, and didn't yet have relevant experience on which to draw.

But how would this pre-programming be achieved? We've imagined positing these instructions as part of a causal explanation of mental transitions, for example, the transition from our first impression of firelight to a belief in heat. However, an instruction is an abstract object, and hence not the kind of thing that can figure in causal explanation. In order for these instructions to play a

the many specific, primitive laws that we've just discussed. As I've explained, I think he has reason to reject that kind of psychological theory, and hence to reject this purely neurological account of the relevant mechanisms.

causal role, they must be represented by some concrete mental entities. These mental representations of the instructions, rather than the instructions themselves, could then causally explain the mental transitions that Meeker envisages.

But in order for the instructions to be mentally represented, our minds would need to contain ideas of firelight, heat, billiard balls, and so forth. And Hume has argued, in Section 2 of the *Enquiry* ("Of the Origins of Ideas") that we have no ideas, prior to experience (E 2.5–7/19–20, 2.9n/22n). So, at the time of presenting his 'Sceptical Doubts', he has—in effect—*already* argued that no psychological mechanism in *our* minds produces transitions to beliefs about unobserved causes (or effects) by means of such pre-programming.

I conclude that, even if Hume does accept a proper functionalist epistemology, there is no lacuna in "Sceptical Doubts": if successful, then Hume's arguments there would show that we do not actually have a faculty whose function is reliably to form true beliefs about unobserved causes and effects, without experience. So, we can meet the challenge posed by Meeker's 'more definitive' objection to my reading, on which Hume's epistemology appeals to the proper functioning of our mental faculties.

Conclusion

I have argued that Hume's "Sceptical Solution of these Doubts" explains our warrant for induction in terms of *natural teleology*. Inductive reasoning ultimately derives from 'custom', which has a *natural function*: reliably to produce true beliefs about the behaviour of ordinary objects in nearby, as-yet unobserved regions of space and time—beliefs that we need for our individual survival, and for the survival of our species. A piece of inductive reasoning is warranted if and only if it's an example of custom functioning *well*, or *as it should.* The other main features of custom that Hume highlights in the course of "Sceptical Solution"—*utility*, *unavoidability*, and *reliability*—have roles to play in this proper functionalist account of our warrant.

I have supported this reading by showing how it coheres with, and helps us to make sense of, Hume's overall project in the *Enquiry*. Hume aims to determine the kinds of objects that our understanding is 'fitted' to investigate, and those it is not. To this end, he engages in 'mental geography', which involves distinguishing mental faculties based on their distinctive functions, as in his account of 'reason' and 'taste' in the moral *Enquiry* (M App1.21/294). One aspect of Hume's mitigated scepticism—his view that we should limit our enquiries to 'common life, and . . . such subjects as fall under daily practice and experience' (E 12.25/162)—follows straightforwardly from the proper functionalist epistemology of his 'Sceptical Solution'. For custom's function does not involve

producing true beliefs about extraordinary objects, or objects at great spatio-temporal distances from us. Hume thereby turns natural teleology against the *a posteriori* theist: his proper functionalist epistemology undermines attempted inductive arguments *from* the observed adaptation of means to ends *to* an intelligent designer of the universe, for such arguments take us beyond the sphere of 'common life'.

Kevin Meeker (2006; 2013: chap. 7) has argued against reading Hume's epistemology as a kind of proper functionalism. I have examined Meeker's objections, and I've defended my reading against them.

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The author has no competing interests to declare.

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