PSYCHOLOGY, EPISTEMOLOGY, AND SKEPTICISM IN HUME'S ARGUMENT ABOUT INDUCTION¹

Do we yet understand Hume's project in his main argument about induction in *Treatise* I.iii.6? Is the argument skeptical? Is it even so much as epistemological, skeptical or otherwise? Or is it merely psychological? Although the literature has made much progress on these questions, we have not reached a full understanding of Hume's position. I hope to fill in some missing pieces of the interpretive puzzle.

1. THE SKEPTICAL INTERPRETATION OF I.iii.6

According to the skeptical interpretation of Liii.6, the section advances the problem of induction, in the fashion of Russell in the *Problems of Philosophy*. This interpretation, which held sway for decades in the middle of the twentieth century, has its attractions. It is philosophically interesting. Also, it coheres with the Beattie-Reid tradition of interpretation, on which Hume is utterly destructive, an arch-skeptic with respect to causal necessity, the causal principle (that every new existence, or new modification of existence, has a cause), the external world, the substantial self, and so forth. Finally, the skeptical interpretation, unsurprisingly, has some basis in the text. Section Liii.6 does supply key premises of the skeptical problem: first, inductive inference presupposes that nature is uniform (T 88-89); second, there is no demonstrative argument to show that nature is uniform (T 89); and third, no probable argument could show that nature is uniform, without begging the question (T 89-90). Hume would also seem to draw the argument's conclusion, that there is no justification whatsoever for belief in the uniformity principle and hence for inductive inference: he writes in Liii. 6 that there is "no reason" (T 92; cf. 91, 139) to draw an inference from the unobserved to the observed.

¹ This talk is a modification of a paper under the same title, forthcoming in *Synthese* (2006); the present version incorporates some material from my 'Inductive Inference' (also forthcoming).

² Russell (1912, ch. VI).

³ For some prominent examples, see Prichard's 1932 lectures on Hume, Russell (1945), Will (1947), Popkin (1951), Ayer's 1960 Oxford inaugural lecture, Flew (1961), Stove (1965), Bennett (1971), Popper (1972), Hacking (1975), and Stroud (1977). The Prichard lectures are in his (1950) and the Ayer lecture in his (1963).

⁴ This is the interpretation Kemp Smith attacked (1905, 1941).

In order to assess the skeptical interpretation, it is necessary to insulate the question of whether Hume is a skeptic specifically about induction from his overall skeptical tendencies. No one denies that Hume at least takes us near the brink of deeply skeptical results. He argues that our faculties lead to contradictory beliefs about the existence of matter (T 231, EHU 154-155). More dramatically, Hume writes in I.iv.7, the concluding section of Book I: "I am ready to reject all belief and reasoning, and can look upon no opinion even as more probable or likely than another" (T 268-269). This seems to imply rejection of beliefs about the unobserved as a special case, and on the ground that all beliefs are equally probable, presumably because they are not justified at all. At the same time, it is important to distinguish among different lines of argument to the latter conclusion. Incoherence in our faculties, for example, might be a ground for skepticism, but it is a ground distinct from the Russellian problem of induction. The issue before us is whether in I.iii.6 Hume advances skepticism on the basis of this problem.

N. Scott Arnold and Janet Broughton independently produce a consideration that should give pause. ⁸ In the Liv.7 build-up to his readiness to reject all belief, Hume relies on a series of what he takes to be prior results: the discovery in Liii.14 that causation involves no "connexion" or "tie" outside the mind (T 266-267); a "dangerous dilemma" arising from the claim in Liv.1 that the understanding subverts itself (T 267-268); and the contradiction about matter in Liv.4 (T 265-266). Whereas Hume's own footnotes cite the three earlier sections, he neither provides a note to Liii.6 nor relies on the argument of that section. If Hume arrives at skepticism on the basis of considerations advanced in Liii.6, surely he would appeal to them in the conclusion of Book I.

⁵ Though see Williams (2004).

⁶ Unless otherwise noted, *quotations* from Hume are from the following editions: David Fate Norton and Mary J. Norton, eds., *A Treatise of Human Nature* (Oxford: Oxford University Press, 2000), for the *Treatise* and the *Abstract*; and Thomas L. Beauchamp, ed., *An Enquiry concerning Human Understanding* (Oxford: Clarendon Press, 1999), for the first *Enquiry*. *Page references*, however, are to the following editions: EHU − L. A. Selby Bigge, ed., *Enquiries Concerning the Human Understanding and Concerning the Principles of Morals*, third edition by P. H. Nidditch (Oxford: Oxford University Press, 1975); T − L. A. Selby-Bigge, ed., *A Treatise of Human Nature*, second edition, with text revised and variant readings, by P. H. Nidditch (Oxford: Oxford University Press, 1978), for the *Treatise* and the *Abstract*.

⁷ Noonan (1999, 129-131) is clear about this distinction.

⁸ Arnold (1983) and Broughton (1983).

Not only does Hume not refer to I.iii.6 in the course of his skeptical tailspin in I.iv.7, Hume's project in the *Treatise*, his argumentative practices, and his explicit statements both about enumerative and theoretical induction, commit him to the thesis that inductive inference is justified. The evidence against the skeptical interpretation has steadily accumulated since the 1970's, to the point that the interpretation has effectively been demolished. This is not to say there are no holdouts, but that holding out is now untenable. It would be well to flesh this out a bit.

First, Hume's project. The *Treatise* carries the subtitle, "BEING AN ATTEMPT TO INTRODUCE THE EXPERIMENTAL METHOD OF REASONING INTO MORAL SUBJECTS" (T xi). The result, in part, is the elaboration of a variety of associative mechanisms: for example, association by the relation of cause and effect, in Book I; the double association of impressions and ideas, in Book II; and the associative mechanism of sympathy, in Books II and III. Hume pursues the science of human nature across all three books of the *Treatise*.

Second, Hume's argumentative practices in support of this project. In the initial section of the *Treatise*, Hume relies on inductive evidence to establish his principle that every simple idea exactly resembles a preceding impression (T 4-5). Just two sections following the main argument about induction, Hume appeals to "experience" and "experiments" to confirm — indeed, "to prove" — his associationist account of belief (T 99, 100). Many subsequent sections are replete with experiments in support of Hume's psychological hypotheses. Book II includes a section "Experiments to confirm this system," that is, Hume's system of the indirect passions.

Third, Hume's explicit statements about induction. Hume tends to assimilate inductive inference to causal inference, often using the latter as a stand-in for the former. Hume writes of causal inference to belief in the unobserved as leading to epistemic success. Indeed, he puts forward a form of a "causal theory of knowledge." In I.iii.2, causation is the only relation that enables the mind to "go beyond what is immediately present to the senses, either to *discover* the real

⁹ For some early inventories of the evidence, see Beauchamp and Mappes (1975), Connon's 1976 conference paper on Hume's naturalism, Winters (1979), and Beauchamp and Rosenberg (1981), as well as Arnold (1983) and Broughton (1983). Connon was published in 1979.

¹⁰ For attempts to resist the case against the skeptical interpretation, see Penelhum (1992) and Winkler (1999).

¹¹ Price (1940, 25; 1969, 176-179); Passmore (1952, 29-34); Pears (1990, 71-72).

existence or the relations of objects" (T 73, emphasis added); the relation of causation "*informs us* of existences and objects, which we do not see or feel" (T 74, emphasis added). There are similar passages subsequent to Liii.6. In Liii.8, a person who stops his journey at a river "*foresees* the consequences of his proceeding forward; and his *knowledge* of these consequences is convey'd to him by past experience" (T 103, emphasis added — *cf.* 104, 148); in Liii.9, the relation of cause and effect "*brings us acquainted* with such existences, as . . . lie beyond the reach of the senses and memory" (T 108, emphasis added). In the *Abstract*, "No matter of fact can be *proved* but from its cause or its effect. Nothing can be *known* to be the cause of another but by experience" (T 654, emphasis added). Similarly, Hume writes: "cause and effect . . . 'tis the only [connexion or relation of objects], on which we can found a *just* inference from one object to another" (T 89, emphasis added). This endorsement occurs *within* Hume's main argument about induction; I say more about it later. At Liii.13, causal inference is "just and conclusive" (T 144). The striking continuity in Hume's positive evaluations of inductive inference throughout Part iii is difficult to explain on the hypothesis that Liii.6 constitutes a skeptical turning-point.

What is more, even after I.iii.6 Hume recognizes gradations in inductive evidence. At I.iii.13, he provides an inventory of "degree[s] of evidence" (T 153-154). These include empirical "proofs," inferences based upon *frequent* observations of *constant* conjunctions, and also probability, beliefs based on infrequent observation or on observation of conjunctions that are not constant (T 130-131, 142). Within probability, there are degrees of "force" (T 130) and "evidence" (T 131, 154). Hume devotes I.iii.13 to "unphilosophical probability" (T 143), in contrast to "kinds of probability [that] are receiv'd by philosophers" (T 143). All this, even though the Russellian problem of induction levels all inductive inference.

¹² Much as causal inference constitutes epistemic success in the *Treatise*, we have in the *Enquiry*: "Had not the presence of an object instantly excited the idea of those objects, commonly conjoined with it, all our *knowledge* must have been limited to the narrow sphere of our memory and senses" (EHU 55, emphasis added); and this: "The existence . . . of any being can only be *proved* by arguments from its cause or its effect; and these arguments are founded entirely on experience" (EHU 164, emphasis added).

 $^{^{13}}$ Similarly, in the *Enquiry*, some events are "more probable" (EHU 58) than others; and, in a passage emphasized by Meeker (1998, 38), "A wise man . . . proportions his belief to the evidence" (EHU 110 - cf. 117).

Fourth, Hume's attitude toward non-enumerative, theoretical induction. Consider Hume's argument in I.iv.2, "Of skepticism with regard to the senses," against indirect or representative realism, systems that postulate extended objects as causes of perceptions:

The only conclusion we can draw from the existence of one thing to that of another, is by means of the relation of cause and effect . . . The idea of this relation is deriv'd from past experience . . . But as no beings are ever present to the mind but perceptions; it follows that we . . . can never observe [a conjunction] between perceptions and objects. 'Tis impossible, therefore, that from the existence or any qualities of the former, we can ever form any conclusion concerning the existence of the latter, or ever satisfy our reason in this particular. (T 212 - cf. EHU 152-153)

Thus, "[t]he relation of cause and effect can never afford us any just conclusion from the existence or qualities of our perceptions to the existence of external continu'd objects" (T 216 - cf. 193). On the traditional interpretation, this argument would be unnecessary; if there is no justification for inductive inference based on observed conjunctions, a fortiori there is no justification for inductive inference not backed by observed conjunctions. ¹⁴ In his contention that no inductive inference to extended objects can get off the ground, Hume does advocate skepticism about theoretical inference, but his argument presupposes the legitimacy of inductive inference based on observed conjunctions. This point has gone entirely unnoticed.

There is extensive evidence that Hume endorses inductive inference. How might proponents of the skeptical interpretation of I.iii.6 respond? Russell thought Hume simply inconsistent. Barry Stroud attempts to transmute this inconsistency into the very message of Hume's philosophy. In Stroud's hands, Hume is purposefully calling attention to the inevitability of the inconsistency, given the universality and irresistibility of inductive inference. Stroud writes: "Hume's theory taken all together shows that most of our beliefs *must* be wrong or unreasonable; given the way we are, we could not have those beliefs unless that were true." Stroud's Hume is

¹⁴ Perhaps Hume's position is that although inference from observed conjunctions is unjustified, *even if it were justified* there would be a special difficulty for inference to extended objects. Against this suggestion, *Treatise* 212 and 216, and *Enquiry* 152-153, say or imply that inductive inference based on observed conjunctions is justified.

¹⁵ The section "Evidence that Hume Considers Inductive Inference Justified" in my (forthcoming) provides detail.

¹⁶ Russell (1945, 672). See also Flew (1986, 56-57).

¹⁷ Stroud (1991, 276).

making a point about an epistemic feature of the human condition. His interpretation is much more interesting than Russell's charge of inconsistency, but it equally presupposes that Hume is a skeptic about induction. We have seen that this cannot be correct.

2. THE DESCRIPTIVIST INTERPRETATION

My critical focus will be on a different and more influential line of interpretation, which I dub descriptivism. The descriptivist reading grants that Hume does not advance skepticism about induction in I.iii.6, but takes this to be a symptom of the absence of normative epistemology in the section. Hume does not there engage in either negative or positive epistemological evaluation of induction. Rather, I.iii.6 is wholly given over to the causes of inductive inference; it is merely an exercise in cognitive psychology. Of course, Hume's investigation may result in fairly high-level or "theoretical" conclusions. The 'descriptivist' label does not signal a contrast between low-level observation and higher-level theory, but rather one between empirical and normative inquiry.

Any viable version of descriptivism will have to concede that Hume in some sense presupposes the justification of inductive inference. After all, he relies on inductive inference throughout Part iii. According to the descriptivist, Hume's psychological investigation does not undermine the commitment to the legitimacy of inductive inference. This is because I.iii.6 does not so much as address the epistemic status of inductive inference. The psychological study of that section is neutral with respect to normative questions.

In order to get descriptivism off the ground, its proponents must neutralize the passages, as in I.iii.6, in which Hume says there is "no reason" for inference to the unobserved. One common descriptivist strategy proceeds in two steps. The first is to construe the "no reason" passages as somewhat awkward formulations of the claim that inductive inference is not caused or produced by reason. The second step is to take this claim to be directed ad hominem at a conception of "reason" Hume himself rejects. Descriptivists can disagree on whether Hume's point is directed at Cartesian, or Lockian, or perhaps any conception of reason as a non-associative faculty. ¹⁹ The important

¹⁸ Noonan calls this view "literalism" (1999, 119-128).

¹⁹ For some variants, see Garrett (1997, ch. 4), Millican (2002, §§ 1 and 10.3), and "Disarming the Evidence for the Traditional Interpretation," in my (forthcoming). Though he is a descriptivist, Garrett does not himself accept this approach.

point is that the claim that inductive inference is not due to "reason" in a specialized sense need not commit Hume to the claim that inductive inference is unjustified; the negative psychological claim about the causation of inductive inference leaves open the question of justification.

A compelling and relatively pure version of the descriptivist interpretation may be found in the paper by Janet Broughton mentioned earlier. More recent literature generalizes the interpretation beyond I.iii.6. The idea is that the whole of Part iii of Book I is purely descriptive. It is not until Part iv, perhaps quite late in Part iv, that Hume undertakes any *epistemological* evaluation of inductive inference. On the most promising version of this position, due to Don Garrett, Part iii is descriptive of the psychology of epistemic evaluation and not itself normative. This extension of a descriptivist reading, to Part iii in its entirety, has an important advantage. It provides a foothold for explaining away the implicit and explicit commitments to inductive inference, both before and after the main argument about induction; they are merely part of the data for psychological study. Much as psychology can investigate inductive inference, it can investigate why we approve of inductive inference (where we do approve of it). At least in Part iii, however, these commitments do not issue from Hume qua epistemologist – so the descriptivist tells us.

Even a generalized descriptivist interpretation faces serious difficulties. I sketch a few of the problems. In the first place, whether or not Hume operates with a specialized conception of "reason" within I.iii.6, Hume applies 'reason' and its cognates to causal inference in I.iii.6 itself subsequent to the main argument about induction (T 93), in I.iii.7 (T 94, 95, 97n), and also in I.iii.8, after attributing causal inference to custom (T 103, 104, 105). This terminology would seem to carry a positive epistemic connotation. There are too many of these passages to list. Descriptivists can contend that, following I.iii.6, 'reason' simply refers to whatever faculty causes inductive inference. Let me offer one consideration that tells against this. In I.iii.9, Hume distinguishes within the faculty of association between "reason," which includes "all probable reasonings," and the "imagination," which includes "whimsies and prejudices, which are rejected under the

²⁰ Garrett (1997, esp. chs. 4, 7, 10). For Owen (1999, chs. 6, 8, 9), I.iii is descriptive of epistemic distinctions internal to a practice.

²¹ Cf. Garrett (1997, ch. 4; 1998, 178-80; 2002, Appendix).

opprobrious character of being the offspring of the imagination" (T 117-118n). Earlier in the section, within his discussion of two systems of realties – one based on perception and memory, the other on causal inference – Hume contrasts beliefs "arising from custom and the relation of cause and effect" with beliefs that "are merely the offspring of the imagination" (T 108). Similarly, in Liii.13 the kinds of probability received by philosophers are "*reasonable* foundations of belief and opinion" (T 143, emphasis added). Further, the Liii.9 distinction between reason and the imagination anticipates that in Liv.4, between two kinds of principles "in the imagination": the "permanent, irresistible, and universal" principles – "such as the customary transition form causes to effects, and from effects to causes" –, which Hume there accepts, and the "principles, which are changeable, weak, and irregular," which "are observ'd only to take place in weak minds" (T 225). I think it difficult to resist reading the occurrences of 'reason' and its cognates after Liii.6 as honorifics.

In the second place, the descriptivist interpretation must strain to accommodate a number of features of Hume's positive evaluations of inductive inference. There is the sheer mass and coherence of these positive assessments – inductive inference as constituting an epistemic success, as just, and as generating degrees of evidence. ²⁴ Garrett suggests that, were Hume not to offer such evaluations, "he would provide a counterexample to his own psychological theory," which "arguably . . . entails that we will, on the whole, continue to *approve* epistemically of our engaging in [such inference], so long as it continues to succeed." ²⁵ This is not persuasive. Even if approval of causal inference is unavoidable, putting such commitments in writing is not. Further, some of Hume's evaluations are second-order. Hume writes at Liii.13: "We shall afterwards take notice of some general rules, by which we ought to regulate our judgment concerning causes and effects" (T 149). Hume's footnote references Liii.15, "Rules by which to judge of causes and effects," where

²² The term 'probability' has a narrower meaning at T 124.

²³ Loeb (2002, § II.3), Millican (2002, § 12).

²⁴ For some skirmishes with descriptivist treatments of some of the texts, see my (2002, 43-44nn.12-13, 47n.19, 102nn.2-3, 131n.43).

²⁵ Garrett (1997, 79-80; cf. 157-158). Similarly, Fogelin appeals to Hume's thesis that we are psychologically compelled to undertake epistemic assessments in order to explain why the positive evaluations of inductive inference do not undermine the skeptical interpretation of I.iii.6 (1985, 148-149).

he offers eight rules, "all the LOGIC I think proper to employ in my reasoning" (T 175). It is a stretch to suggest that Hume is merely reporting that we are psychologically determined to engage in and approve of higher-order evaluations. In addition, Hume does not say things he ought to be expected to say on the descriptivist interpretation. Hume does not pause to note that his own positive evaluations are offered as nothing but part of the data for psychological study. Similarly, when Hume utilizes inductive inference – appealing to "experiments" and the results they "prove" –, he does so unflinchingly, without cautionary comment, in each Book of the *Treatise*.

In the third place, we have observed that Hume writes that inductive inference is "just" not only in Liii.6 itself (T 89), but also later in Liii.13 (T 144). Beyond that, Hume applies 'just' and its cognates to inductive inference well into Part iv: in Liv.2, "Of skepticism with regard to the senses" (T 216), and in Liv.4, "Of the modern philosophy" (T 225). The latter passage, where Hume is giving an example of the operation of the permanent, irresistible, and universal principles, is well-known: "One who concludes somebody to be near him, when he hears an articulate voice in the dark, reasons justly and naturally; tho' that conclusion be deriv'd from nothing but custom. . . " (T 225). What is the descriptivist reading to make of the *continuity* in Hume's seemingly positive assessments of causal inference across Parts iii and iv of Book I? These assessments occur as late as Liv.4. If Hume is not yet engaged in normative epistemology there, when does this enterprise set in? Liv.5 and Liv.6, "Of the immateriality of the soul" and "Of personal identity," are by and large given over to metaphysics. Descriptivism seems to require that cognitive psychology does not give way to normative epistemology until the final section of Book L. This seems an

²⁶ For these points, see my (2002, 45n.15).

²⁷ There is also continuity in Hume's positive assessment of causal inference across the *Treatise* and the *Enquiry*. In Sections 10 and 11, "Of Miracles" and "Of a Particular Providence and of a Future State," there are a half dozen references to "just" reasoning or reasoners, or to reasoning "justly" (EHU 110, 113, 136, 139, 142, 145) – these in a context where Hume is relying on his distinction between legitimate and illegitimate forms of causal inference to criticize arguments for God based on miracles and design. See also notes 12 and 13.

²⁸ For this question, and its bearing on the descriptivist contention that Hume's use of 'just' and its cognates in Part iii is not normative at all, see my (2002, 43n.12, 43-44n.13).

²⁹ Hence Garrett (1997, 95, 230, 232). Cf. Owen (1999, esp. 205-206).

odd role for a section entitled "Conclusion of this book." The alternative is to concede that the Treatise contains normative epistemology "all the way back," that is, at least as early as Part iii. 30

3. THE EPISTEMIC CHARACTER OF I.iii.6

Let us put to the side the difficulties I have canvassed for the generalized descriptivist interpretation. Descriptivism cannot survive considerations internal to I.iii.6 itself. All descriptivists are committed to the thesis that Hume is not engaged in normative epistemology in that section. According to the interpretation, Hume's point is merely psychological, that reason does not cause or determine us to make inductive inferences; rather, inductive inferences are caused by some other faculty. This is a negative conclusion within cognitive psychology. On the descriptivist interpretation, I.iii.6 has no epistemic force at all. Against this, I will argue that Hume does make a negative epistemic point, albeit one that falls short of radical skepticism.

I begin by noting an ambiguity that tends to beset the descriptivist reading. Consider a formulation of Garrett's: "[Hume] is arguing that we do not adopt induction on the basis of recognizing an *argument* for its reliability."³¹ Are advocates of the descriptivist reading supposing that Hume restricts the arguments he is canvassing to good arguments, or must he also be on the look-out for bad arguments that seem to be good ones and thus manage to cause inductive inference?³² The ambiguity here is Hume's own. In both I.iii.6 (T 89) and the corresponding section of the first *Enquiry* (EHU 32, 37, 38), he uses the terminology of "founded" and "foundation" without explicitly saying whether he is looking for a psychological or an epistemic foundation.³³ Hume does not pause — not even at critical junctures — to distinguish merely psychological and epistemic notions.

³⁰ Why would Hume Hume defer normative epistemology until after Part iii? Garrett sometimes portrays Hume as engaged in a Quinean enterprise, with the cognitive faculties investigating themselves (1998, 186). Garrett has suggested (in conversation) that Hume withholds his epistemological evaluation until all the empirical data is in. It would be surprising, however, if Hume thought that he could ever possess all the relevant psychological data. In any event, why would he not provide provisional epistemic assessments of inductive inference and other beliefforming mechanisms as the empirical investigation proceeds? Cf. my (2002, 14-15, 88-92; 2004, § II.2).

³¹ Garrett (1997, 92). Garrett now puts no weight on an argument specifically for the *reliability* of inductive inference (2002, 333n.30).

³² The same question could be asked of formulations of my own, both (2002, § II.2) and (forthcoming).

³³This ambiguity, perhaps even vacillation, is but one instance of Hume's tendency to use terminology that straddles purely psychological and epistemic notions. For example, he writes that causation is the only relation that produces "assurance" (T 73, 124; cf. 106, EHU 27) in matters of fact that have not been observed. Does 'assurance'

The interpretive issue depends upon two cases. First, is Hume's point that no argument that purports to be demonstrative causes inductive inference, or that no argument that is in fact sound causes such inference? Similarly, is his point that no probable argument that purports to be cogent causes inductive inference, or that no genuinely cogent probable argument does so? On these questions, I am in agreement with Peter Millican: "Hume focuses only on *legitimate* forms of argument which on Garrett's principles he has no right to do." Millican was the first to advance a number of the points that follow.³⁴

Hume's intentions are clear in the case of demonstrative argument. He claims that there is no demonstrative reasoning to "prove" that nature is uniform (T 89, 92; EHU 35). This looks like a "success" verb; a proof is presumably a successful demonstration. Hume shows no interest in the question of whether inductive inference is caused by reasoning, however seductive, that falls short of a genuine proof of the uniformity principle. The descriptivist reading cannot explain Hume's silence in regard to this possibility. Garrett replies that such arguments, "even if convincing, would not be instances of genuine demonstrations operating alone." Granted, but were Hume merely pursuing cognitive psychology, he would need to exclude the possibility that inductive inference is caused by such impure reasoning. Bad arguments sway our thinking and practices all the time. Hume was certainly alert to purportedly demonstrative arguments that are flawed. After providing a general argument to show that there is no demonstration of the causal principle, he devotes five additional paragraphs to showing that its purported demonstrations – due to Hobbes, Clarke, Locke, and others – are "fallacious and sophistical" (T 80). All this in Liii.3. If the only issue in play in Liii.6 is whether a demonstrative argument causes inductive inference, it is difficult to see why demonstrations that are subtly flawed, but have an air of plausibility, could not do the trick.

I turn to the case of probable reasoning. A preliminary point. Why does Hume fail to consider inductive arguments that are not good ones? Garrett's explanation is that even bad

mean mere belief, a psychological state, or does it imply a state that involves *knowledge*, and hence carry epistemic implications? See my (2002, 61, 73, 77).

³⁴ Millican (1998, § VII; 2002, 157-158). The quotation is from his (1998, 150).

³⁵ Garrett (1998, 187). Garrett also finds "rather implausible" the hypothesis that inductive inference depends upon "fallacious attempted demonstrations." But Hume is alert to a wide range of psychological "distortions" both to belief, as in "unphilosophical probability," and sentiment. See my (2002, ch. IV).

probable arguments rely on inductive extrapolation from the observed to the unobserved; for this reason, "they can no more be the underlying cause of inductive inference than 'good' or 'philosophical' ones can." This line of defense depends upon Garrett's view that I.iii.6 seeks to explain the entire *practice* of inductive inference, rather than individual inductive inferences. This is dubious. It is custom or past experience that causes individual inductive inferences. Hume is clear in I.iii.16 that we cannot give "the ultimate reason, why past experience and observation produces such an effect" (T 179; cf. EHU 54-55). The ultimate reason for inductive inference, and hence the cause of the operation of custom itself, lie beyond Hume's explanatory ambitions. 38

Even bracketing this matter, the textual situation with regard to probable reasoning is more complex than in the case of demonstrative argument. Hume writes in the *Treatise*: "The same principle cannot be both the cause and effect of another" (T 90). This "causal" formulation perhaps opens the door to taking the issue to be confined to the causation of belief in the uniformity principle. This way of putting things, however, disappears in the *Abstract*:

All probable arguments are built on the supposition, that there is this conformity betwixt the future and the past, and therefore can never prove it. . . . [O]ur experience in the past can be a proof of nothing for the future, but upon a supposition, that there is a resemblance betwixt them. (T 651-652)

This reproduces language in the *Treatise*: "probability is founded on the presumption of a resemblance betwixt those objects, of which we have had experience, and those, of which we have had none; and therefore 'tis impossible this presumption can arise from probability" (T 90). The implicit point is that a probable argument for the uniformity of nature, the conformity of unobserved to observed, would be question-begging, presupposing the resemblance it seeks to establish. This is explicit in the *Enquiry*: "To endeavour . . . the proof [that the future will be conformable to the past] by probable arguments . . . must be evidently going in a circle, and taking that for granted,

³⁶ Garrett (1998, 187).

³⁷ See Garrett (1997, esp. 91-92; 2002, Appendix). In her (2004), Broughton contrasts her version of the position with that of Garrett and also begins to part company with the pure descriptivist position.

³⁸ For development of the point, see my (2004, Part III).

³⁹ As at Garrett (1997, 82, 91-92).

which is the very point in question" (EHU 35-36). Hume's uptake on the causal formulation in the *Treatise* is significant: "The same principle cannot be both the cause and effect of another; and this is, perhaps, the only proposition concerning that relation [of causation], which is either intuitively or demonstratively certain" (T 90). Hume cannot resist the causal formulation, which affords the opportunity to inject a clever, but gratuitous, slap at reason. ⁴⁰ Taken literally, however, the formulation runs askew to the underlying point about circularity, and thus can appear to support the descriptivist reading. This is ultimately "noise" in the text.

Perhaps one could both brush off the *Abstract* and try to insist that Hume's claims about probable arguments in the *Treatise* are merely psychological, whereas in the *Enquiry* they are epistemic. It is difficult to see any advantage in such maneuvers, since it is clear that Hume's claims in the case of demonstrative arguments for the uniformity principle carry epistemic weight. Hume's negative argument about reason manifests an epistemic dimension in the cases of both demonstration and probability.

4. JUSTIFIED INDUCTIVE INFERENCE AS HUME'S EXPLANANDUM IN I.iii.6

What does explain Hume's failure to consider the possibility that reason supplies considerations that, though defective, are sufficiently appealing to cause us to make inductive inference? The answer must be that Hume imposes an epistemic constraint on any causal explanation of inductive inference: the explanation of our making inductive inferences must be compatible with their being justified. It seems plausible – plausible enough to attribute the thought to Hume – that if inductive inferences are caused by bad or defective reasoning, then they would not be justified, in violation of the constraint. This explains why Hume confines his attention to good or cogent considerations of reason — to genuine demonstrations and to probable reasoning that is not question-begging. Given that inductive inference is justified, it could not be caused by reason — bad reasoning is excluded, and there is no good reasoning to cause it. Attributing the

⁴⁰ Bennett writes that the causal formulation "embodies a joke" (2001, 261)

⁴¹ This differs from Connon's view that Hume takes inductive inference to be justified and seeks a description of what is involved in making inductive inference (1976, 129). Not any description would be compatible with the justification. Criteria for justification are operating in the background.

⁴² We cannot regard the constraint as merely ad hominem against philosophers who maintain that reason does explain the belief in the uniformity principle. These friends of reason doubtless think that the arguments that figure in such explanations are good ones. Hume could defeat their position by showing that it is not the case that good

epistemic constraint to Hume also accounts for his willingness to say in the course of his main argument about induction in I.iii.6 itself, that "cause and effect . . . 'tis the only [connexion or relation of objects], on which we can found a just inference from one object to another" (T 89). This is a statement of the data to be explained: the making of justified inductive inference. (The assumption, of course, is that some inductive inferences are justified, not that they all are.) The descriptivist reading obscures the epistemic structure of Hume's argument.

My suggestion does not reduce to the earlier point that Hume's project in the science of human nature and his argumentative practices presuppose or assume that inductive inference is justified. This is an interpretive commonplace. As we have seen, even descriptivists must allow that Hume presupposes the justification of inductive inference. As Broughton puts things, there is a "natural presupposition," one Hume shares, that inductive inference is reasonable. 43 The linchpin in my interpretation is not that Hume's engaging in inductive inference presupposes that it is justified, but that in I.iii.6 he incorporates this positive epistemic status into his description of the subject matter under investigation. Let me clarify the distinction here. Suppose Hume utilizes inductive inference in the course of I.iii.6. This would not explain his drawing epistemic conclusions, and certainly not the negative conclusion that a probable argument for the uniformity principle is question-begging. The conclusion is germane only insofar as Hume takes justification to attach to the kind of inference under investigation. Since induction is justified, it cannot be due to a question-begging argument, and hence not to a probable argument for the uniformity principle. To the extent that Hume utilizes induction in I.iii.6, the assumption that inductive inference is justified would be operative at two levels: in the method of investigation, but also in Hume's understanding of the phenomenon he seeks to explain.

Another way to see the distinction is as follows. It is clear that Hume relies on inductive inference in I.iii.8, where he argues from "experience and observation" (T 101), from "experiments"

reasons cause inductive inference. This would not, however, be sufficient to establish the position descriptivists attribute to Hume: that inductive inference is not due to reason. A showing that good reasons do not cause inductive inference leaves out of account the possibility that inductive inference is due to a defective employment of reason, rather than to custom. We must therefore suppose that the assumption that inductive inference is justified is Hume's own.

⁴³ Broughton (1983, 5, 12). See also Garrett (1998, 186).

(T 99, 100, 102), that causal inference is due to custom or habit. By contrast, the Liii.6 discussion of the uniformity principle in fact does not utilize inductive inference. Rather, Hume is relying on philosophical reflection – considerations about the conceivability of the falsehood of the uniformity principle, considerations about the presuppositions of any probable argument – to reveal limitations in demonstrative and probable arguments. In the core of Liii.6 (paragraphs four through eleven) the assumption that inductive inference is justified *is* part and parcel of the *phenomenon under investigation*, but *not* integral to *the method of investigation* itself. The main argument in Liii.6 is shot through with epistemological claims and can hardly be regarded merely as an exercise in descriptive psychology.

5. HUME'S OPPOSITION TO EPISTEMIC PARASITISM

A closely related textual consideration arises in connection with I.iii.8. Recall that a person who stops his journey at a river "foresees the consequences of his proceeding forward." Hume adds some important comments: "custom operates *before we have time for reflection*," without "*a moment's delay*"; we draw the inference from past experience "without reflecting on it" (T 104, emphases added). The riverbank passage poses a challenge to the descriptivist reading: if in I.iii.6 Hume is merely making the negative point that inductive inference is not caused by reason, why does he not rest content with the empirical observation that reflection and reason play no role in typical cases of basic inductive inference? Indeed, Hume does make this point in I.iii.6: "the imagination of itself supplies the place of . . . reflection," and does so without "a moment's delay" (T 93). This simple observation would seem to dispose of reason as the causal explanation of inductive inference. ⁴⁴ If so, how is the descriptivist to explain the central position of the considerations about demonstrative and probable arguments in the section?

An argument in I.iv.2, "Of skepticism with regard to the senses," heightens the puzzle. Hume asks "whether it be the *senses*, *reason*, or the *imagination* that produces" (T 188) the belief in continued and independent objects. This looks a lot like asking, as Hume does in I.iii.6 (T 88-89, 92), whether it is reason or the imagination that produces inductive inference. Here is Hume's case against reason in I.iv.2: "whatever convincing arguments philosophers may fancy they can produce

⁴⁴ See Millican (1998, 152) and Broughton (forthcoming).

to establish the belief of objects independent of the mind, 'tis obvious these arguments are known but to very few, and that 'tis not by them, that children, peasants, and the greatest part of mankind are induc'd" (T 193) to believe in body. Hume relies on the empirical observation that most of us believe in body without interposing any reflection or reason. If that is a good argument against reason's causing the belief in body, why do not analogous considerations — the person at the riverbank — suffice to show that reason does not cause inductive inference?

Why cannot Hume rest content to observe that basic inductive inferences proceed without a moment's delay; that they are not caused by reflection or reason, and a fortiori they are not caused by any good or cogent deployment of reason? The answer is that he wants to foreclose a broad strategy for explaining why inductive inference is justified. Suppose that reason, fully deployed, could produce cogent reflections in favor of the uniformity principle. In that event, friends of reason – those who think that the justification of inductive inference *somehow* resides in reason – might propose a position along the following lines. Even if the person at the riverbank does not himself invoke the cogent reasoning, even if he is not so much as aware of it, his inductive inferences might nevertheless possess justification in virtue of the *availability* of the cogent argument; such justification would be indirect, parasitic upon the existence of reasoning available to a more reflective person. Let us call this strategy *epistemic parasitism*.

How might indirect justification be thought to arise? Consider Descartes. We attain unshakable certainty, scientific knowledge, that the material world exists only if we first prove the existence of a non-deceiving God. Where does that leave those of us who have not proved this, and hence do not possess certain or scientific — let's say *lofty* — knowledge? Evidently, such knowledge of the material world as you and I possess is second-rate. One way to flesh this out is to say that, even though we have not proved a non-deceiving God, we do possess a fragment of the system of beliefs required for lofty knowledge. Perhaps our sketchy belief system confers on us second-rate knowledge. Alternatively, perhaps the fact that we could obtain lofty knowledge, were we fully to exercise our faculty of reason, confers second-rate knowledge. Either way, our lowly knowledge derives from the availability of a cogent argument for a non-deceiving God. 45

⁴⁵ I say more *about* these themes in "Some Context" and "Hume's Epistemic Options" in (forthcoming) and (2004, §§ II.1 and IV.4).

Epistemic parasitism cannot be defeated by the observation that ordinary cognizers — as at the riverbank — do not reason or reflect; the whole point of parasitism is that justification for perfectly ordinary persons is derivative from the availability of lofty knowledge that they do not themselves possess. Hume wants to preempt parasitism by showing that putative lofty knowledge is unattainable in the first place, so that no other knowledge can be *second*-rate. In connection with inductive inference, Hume does take himself to show that lofty knowledge is unattainable; there is no (demonstrative or probable) argument *available* to reason that justifies belief in the uniformity principle. We thus cannot regard the argument about induction in Liii.6 as a descriptive exercise in cognitive psychology. If it were, the riverbank considerations would be the end of the matter. Hume wants to quash overly reflectivist accounts of the way the mind ordinarily works, but he also needs to take on overly intellectualist accounts of the way the mind could work even in the case of an ideal, fully reflective, cognizer. To this end, the riverbank argument can at best play a role that is supplementary to the main argument about induction.

What about *Treatise* Liv.2, where Hume does employ the empirical argument that "children, peasants, and the greatest part of mankind" have no knowledge of any considerations of reason that support the belief in body? In this context, there is no harm in employing the short argument. In Part iii, Hume's claims that reason could not cause us to make causal inferences, given that such inferences are justified, is accompanied by his causal theory of knowledge, the thesis that *all* knowledge of unobserved matters of fact is based on causal inference (T 73-74, 87, 89, 107-108). This substantive thesis about the scope of causal inference (T 193, 212; cf. 198, 216) carries over into Liv.2. Part iii has destroyed parasitism as a general epistemological strategy in accounting for knowledge of matters of fact. In Part iv, the earlier care in addressing parasitism is no longer required.

We have seen that a generalized descriptivist interpretation faces numerous difficulties. Hume persistently provides positive assessments of inductive inference, and does so without comment or

⁴⁶ Broughton (forthcoming) emphasizes the first of the two ambitions.

⁴⁷ Cf. Millican (1998, 151-152). Hume concludes the riverbank passage: "This removes all pretext, *if there yet remains any*, for asserting that the mind is convinc'd by reasoning" (T 104, emphasis added) of the uniformity principle.

qualification. These assessments include evaluations of second-order inductive principles. There is the continuity in his posture toward inductive inferences across Part iii and much of Part iv of Book I, and also a recurring normative distinction between reason, which includes causal inference, and the imagination. In addition, the riverbank passage in I.iii.8, together with the character of Hume's main argument about induction, pose severe difficulties for the descriptivist account of I.iii.6. Even the most casual reader will be struck by the pronounced epistemic flavor of the section.

6. HUME'S EPISTEMOLOGICAL EXTERNALISM

Does recognition of the epistemic character of I.iii.6 saddle us with the skeptical interpretation of I.iii.6 after all? It would, if Hume thought that a belief is justified only if it is supported or supportable by good argument. Roughly speaking, this is an *internalist* assumption. According to epistemological internalism, the justification of a belief depends exclusively upon the beliefs one holds or – in versions that tolerate parasitism – upon beliefs that are available, beliefs one could hold. The Russellian "problem of induction" relies on internalist presuppositions in moving from the claim that there is no cogent (demonstrative or probable) *argument* for the uniformity of nature, to the conclusion that no inductive belief has any justification. Even supposing that demonstrative and probable arguments exhaust the field, the Russellian skeptic requires the premise that an inductive belief can be justified only by argument, argument taking as premises other beliefs one holds or could hold.⁴⁸

In light of the massive evidence that Hume is not a skeptic about induction, he must reject this internalist way of thinking. Hume does contend that there are no cogent arguments for the uniformity of nature. Yet, he labels inductive inference "just" in the course of his main argument about induction and maintains his commitment to inductive inference in the remainder of Part iii and at least much of Part iv. This is unaccountable, on the supposition that Hume is an internalist. Hume contributes key premises for the skeptical argument about induction, but he does not share the internalist framework that is also necessary to generate its conclusion. In order to avoid

⁴⁸ Garrett notes that the skeptical reading requires attributing this premise to Hume and observes that he nowhere advances it (1997, 82-83). As we shall see, Hume rejects the premise. Indeed, it is rejected implicitly as early as I.iii.6.

⁴⁹ If he is an internalist, as characterized above. There is room to attribute to Hume a "negative" coherence theory of justification. See my (2001).

attributing skepticism to Hume, we need not suppose that his argument in I.iii.6 is only directed against a specialized conception of "reason" (§ 2). Skepticism can be avoided, even if there is no good argument *of any sort* supporting the uniformity principle.

Let us see more concretely how Hume can stand by his positive epistemic assessment of inductive inference, though such inference is not justified in virtue of argument. Hume's negative claim in I.iii.6, that inductive inference is not due to reason – not to any reason as reasons are conceived by the internalist –, leads to the positive claim in I.iii.8, that it is due to custom. In I.iii.12, "Of the probability of causes," Hume extends the role of custom to the explanation of forms of probabilistic or statistical inference that are "receiv'd by philosophers" (T 143). Once reason or argument has been ruled out, custom is the only resource Hume has available to account for induction's positive epistemic status. I do not mean that inductive inference is justified simply because it is due to custom or repetition. Hume stresses in I.iii.9 that education, in the sense of indoctrination, is also due to custom, but is "disclaim'd by philosophy, as a fallacious ground of assent" (T 118). At the same time, if inductive inference is justified, but not by argument, custom is the only place to look for its justification. There must be some feature of custom, as it operates in inductive inference, that generates justification.

In pioneering work, Kemp Smith in effect identified the irresistibility and unavoidability of custom as the crucial feature. A number of other features of custom, however, suggest themselves as candidates for the central role in Hume's epistemology. Perhaps the operation of custom confers justification insofar as it is an operation of a healthy organism, or because it is adaptive, or because it is reliable. These options give rise to proper function, adaptivisit, and reliabilist interpretations of Hume. We won view is that what matters for Hume is custom's tendency to infix ideas, to produce steady beliefs. Adjudicating among these alternatives – better yet, understanding how

⁵⁰ Whether Hume can sustain this epistemic distinction between two kinds of custom is a difficult matter central to his epistemological project. See my (2002, § VII.5).

⁵¹ Kemp Smith (1905, 1941). See my (2002, 20-25) for difficulties.

⁵² For a proper function interpretation, see Craig (1987, 81) and Wolterstorff (1996, 166n.6); for adaptivism, Schmitt (1992, 68-72); for reliabilism, Schmitt (1992) and (2004).

⁵³ I advance this view in my (2002). I amend my position in (2004).

the texts and Hume's historical position constrain the choice among them – is the central challenge in coming to terms with Hume's epistemological position. What matters here is that the various options – appealing to irresistibility, proper functioning, adaptiveness, reliability, stability – are *externalist* theories. According to these theories, the epistemic status of a belief depends, at least in part, upon naturalistic facts about the mechanism that produces it. Hume is offering an externalist account of why inductive inference is justified. With internalism dispatched, externalist reasons carry the day, with Hume even identifying reason, non-demonstrative reason, with causal inference in Liii.9 and other passages (T 193, 212). 55

Attributing externalism to Hume explains how he could reject internalism and thus avoid drawing a skeptical conclusion at the close of I.iii.6. It also explains why he cannot rely on the riverbank considerations, at least insofar as Hume wants to argue against internalism; they do not defeat parasitism as an internalist strategy. An externalist interpretation has considerable explanatory power and coheres with Hume's focus on custom as the mechanism that underpins inductive inference.

Of course, we would want to locate direct textual evidence for Hume's externalism. I cannot construct the case here, but I can show that there is such evidence. The opening paragraph of I.iv.4 is one central place to look. A person who infers from the articulate voice that someone is near "reasons justly and naturally." By contrast:

[O]ne, who is tormented he knows not why, with the apprehension of spectres in the dark, may, perhaps, be said to reason, and to reason naturally too: But then it is must be in the same sense, that a malady is said to be natural; as arising from natural causes, tho' it be contrary to health . . . (T 225-226)

This resonates with adaptivist theories. So too does I.iii.10, where "Nature has . . . chosen a medium" between perceptions, on the one hand, and the "unsteadiness" of mere ideas, on the other, so that we might avoid future "good and evils" (T 119). The medium is belief, and steadiness in the service of guiding action is its natural function. This passage also resonates with proper function and stability theories.

⁵⁴ For a start on this project, see my (2004, Part III).

⁵⁵ I am not systematically addressing the shifts in Hume's use of the term 'reason'. This is a complicated story.

In discussing the riverbank passage, I suggested that Hume seeks to thwart epistemic parasitism. His commitment to externalism lies at the root of this objective. The pressure toward parasitism arises within an internalist framework. From an internalist perspective, the arguments required to justify fundamental beliefs – the uniformity of nature, the existence of the external world, and so forth – must meet some threshold of articulation and sophistication. Suppose the internalist sets the threshold low. Even so, it is implausible that "honest gentlemen" (T 272) or landholders, peasants (T 193), and the vulgar at large, as well as children (T 193), reach the required threshold. The internalist must resort to providing, in the first instance, an account of the justification of suitably idealized cognizers. So Justification and knowledge for the vulgar and children is derivative from that of idealized cognizers. Within externalism, this pressure toward parasitism vanishes. Custom operates in the vulgar and in children; the favorable epistemic status of their inductive beliefs can be explained in terms of the relevant features of custom, without any reference to belief systems available to more reflective persons. Whereas for Descartes the proper object or chief subject matter of epistemological study is the idealized cognizer, for Hume it is the knowledge possessed by a varsity of perfectly ordinary organisms.

Indeed, it is part of Hume's enterprise to secure the epistemic standing of many beliefs in non-human animals. This is explicit in the *Enquiry*: "the most ignorant and stupid peasants, nay infants, nay even brute beasts, improve by experience, and *learn* the qualities of natural objects, by observing the effects, which result from them" (EHU 39, emphasis added; cf. 105). The externalist theories provide a direct explanation of the epistemic achievements of non-human animals. Hume devotes an entire section of the *Treatise*, I.iii.16, to the cognitive achievements, the "reason," of non-human animals. So too in the *Enquiry*. Custom operates "all the way down," from the most reflective philosophers to non-human animals. Hume's appeal to custom is thus central to his constructive project of explaining how beliefs of all these organisms can constitute knowledge, full-fledged knowledge, in their own right. Epistemic parasitism is antithetical to Hume's picture.

⁵⁶ This formulation applies both for foundationalist and coherentist versions of internalism. I leave open the extent to which the latter are in play in Hume. See "Hume's Epistemic Options" in my (forthcoming).

We might summarize some of our results as follows. Section Liii.6 can be neither purely descriptive nor purely skeptical in intent. Not purely descriptive – that inductive inference is justified is built into the characterization of the phenomenon to be explained and constrains the admissible explanations. And not purely skeptical – Hume's endorsement of induction survives both the negative claim that inductive inference is not caused by reason and the constructive claim that it is caused by custom. This does not leave Hume and his interpreters in the position of having to walk a fine line. To the contrary, externalism represents a broad swath of middle ground, allowing Hume to be engaged in normative epistemology without embracing the Russellian problem of induction. The difficulty has been to get this territory into commentators' field of vision. As Garrett observes, Hume relies on inductive inference "before, during, and after" Liii.6.⁵⁷ We can suppose that Hume just could not help himself; or we can recognize that his commitment to induction is sustained by an externalist orientation in epistemology, and hence is impervious to internalist or Russellian attack. In a recent book on the problem of induction, reliabilism is the first solution considered. Russell, an internalist and foundationalist, had no such solution remotely in view.

At this juncture, we are positioned to entertain a way of thinking about the motivation for the descriptivist interpretation. Consider the old saw that Hume confuses psychology with philosophy. On its face, this is uncharitable. We might think of proponents of descriptivism as opting for a more charitable version of this line: Hume does not *confuse* psychology with philosophy; he self-consciously *separates* them. As we have seen, this is not Hume. To the contrary, it requires us to jettison one of his most distinctive philosophical contributions: that the psychology of belief-formation, the characteristics of the psychological mechanisms that produce belief, are critical determinants of the epistemic status of belief.

Who would have thought Hume's view a confusion? The answer, painting with a broad brush, is interpreters under the sway of logical empiricism, where we find the claim that philosophy, and hence epistemology, is *a priori*. Psychology is at best relevant to "the context of discovery," not to

⁵⁷ Garrett (1997, 78).

⁵⁸ Howson (2000).

"the context of justification." Theories of evidence are essentially theories of a priori confirmation relations. For Hume to think that evidence depends upon genetic facts about belief then appears to be a confusion. This would have bothered positivistically inclined interpreters. After all, logical positivism claimed Hume as one of its own insofar as he stressed the divide between "relations of ideas" and "matters of fact," in the service of an onslaught on metaphysics. Interpreters in the positivist tradition thus strived to save Hume from himself.

The positivist tradition, however, predates more naturalistic strands in twentieth century epistemology. Positivists were either foundationalists (as with Schlick) or coherentists (as with Neurath), but internalists either way. They did not contemplate, and certainly did not accept, externalist theories. We can think of descriptivism as resulting from damage control within an interpretive tradition that does not see externalism as an option. I am unsure that in aligning himself with externalism Hume was ahead of his time, but he was certainly ahead of his positivistically inclined twentieth century interpreters. ⁵⁹

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⁵⁹ I am grateful to Don Garrett and the other participants in the April, 2005 Wake Forest University Hester Conference on Hume's Naturalism for lively and useful discussion. I am indebted especially to Janet Broughton and Peter Millican for helping me advance my thinking on the topic of this paper.

REFERENCES

Arnold, N. Scott: 1983, 'Hume's Skepticism about Inductive Inference', *Journal of the History of Philosophy* **21**, 31-55.

Ayer, A. J.: 1963, A Concept of a Person and Other Essays, Macmillan, London.

Beauchamp, Tom L., and Thomas A. Mappes: 1975, 'Is Hume Really a Sceptic about Induction?', *American Philosophical Quarterly* **12**, 119-29.

Beauchamp, Tom L., and Alexander Rosenberg: 1981, *Hume and the Problem of Causation*, Oxford University Press, New York.

Bennett, Jonathan: 1971, Locke, Berkeley, Hume: Central Themes, Clarendon Press, Oxford.

Bennett, Jonathan: 2001, Learning from Six Philosophers, vol. 2, Clarendon Press, Oxford.

Broughton, Janet: 1983, 'Hume's Skepticism about Causal Inferences', *Pacific Philosophical Quarterly* **64**, 3-18.

Broughton, Janet: 2004, 'Causal Inference and the Uniformity Principle', American Philosophical Association Central Division, April 24, 2004.

Broughton, Janet: (forthcoming), 'Hume's Explanation of Causal Inference', in *Early Modern Metaphysics: Essays in Honor of Vere Chappell*, Paul Hoffman, David Owen, and Gideon Yaffe (eds.), Broadview Press, Toronto.

Connon, R. W.: 1979, 'The Naturalism of Hume Revisited', in David Fate Norton, Nicholas Capaldi, and Wade L. Robison (eds.), *McGill Hume Studies*, vol. 1, *Studies in Hume and Scottish Philosophy*, Austin Hill Press, San Diego, pp. 121-145.

Craig, Edward: 1987. The Mind of God and the Works of Man, Clarendon Press, Oxford.

Flew, Antony: 1961, *Hume's Philosophy of Belief, a Study of his First Inquiry*, Routledge & Kegan Paul, London.

Flew, Anthony: 1986, David Hume: Philosopher of Moral Science, Basil Blackwell, Oxford.

Fogelin, Robert J.: 1985, *Hume's Skepticism in the <u>Treatise of Human Nature</u>*, Routledge, London.

Garrett, Don: 1997, Cognition and Commitment in Hume's Philosophy, Clarendon Press, Oxford.

Garrett, Don: 1998, 'Ideas, Reason and Skepticism: Response to My Critics', *Hume Studies* **24**, 171-194.

Garrett, Don: 2002, 'Hume on Testimony concerning Miracles', in Peter Millican (ed.) *Reading Hume on Human Understanding*, Clarendon Press, Oxford University Press, pp. 301-334.

Hacking, Ian: 1975, The Emergence of Probability, Cambridge, Cambridge University Press.

Howson, Colin: 2000, *Hume's Problem: Induction and the Justification of Belief*, Clarendon Press, Oxford.

Kemp Smith, Norman: 1905, 'The Naturalism of Hume (I)', Mind 14, 149-73.

Kemp Smith, Norman: 1941, *The Philosophy of David Hume: a Critical Study of its Origins and Central Doctrines*, Macmillan, London. Reprinted, 1966, by St. Martin's Press, New York.

Loeb, Louis E.: 2001, 'Integrating Hume's Accounts of Belief and Justification', *Philosophy and Phenomenological Research* **63**, 279-303.

Loeb, Louis E.: 2002, *Stability and Justification in Hume's <u>Treatise</u>*. New York: Oxford University Press.

Loeb, Louis E.: 2004, 'Stability and Justification in Hume's *Treatise*, Another Look — A Response to Erin Kelly, Frederick Schmitt, and Michael Williams', *Hume Studies* **30**, pp. 339-404.

Loeb, Louis E.: (forthcoming), 'Inductive Inference', in Elizabeth Radcliffe (ed.), *Blackwell Companion to Hume*, Blackwell, Oxford.

Meeker, Kevin: 1998, 'Hume: Radical Skeptic or Naturalized Epistemologist?', *Hume Studies* **24**, 31-52.

Millican, Peter: 1998, 'Hume on Reason and Induction: Epistemology or Cognitive Science?', *Hume Studies* **24**, pp. 141-159.

Millican, Peter: 2002, "Hume's Sceptical Doubt's Concerning Induction," in Peter Millican (ed.) *Reading Hume on Human Understanding*, Clarendon Press, Oxford, pp. 107-173.

Noonan, Harold W.: 1999, Hume on Knowledge, Routledge, London

Owen, David: 1999, *Hume's Reason*, Oxford University Press, Oxford.

Passmore, John: 1952/1968, *Hume's Intentions*, Gerald Duckworth, London.

Pears, David: 1990, *Hume's system: an Examination of the First Book of his <u>Treatise</u>*, Oxford University Press, Oxford.

Penelhum, Terence: 1992, *David Hume: an Introduction to his Philosophical System*, Purdue University Press, West Lafayette, Indiana.

Popkin, Richard H.: 1951, 'David Hume: his Pyrrhonism and his Critique of Pyrrhonism', *Philosophical Quarterly* **1**, pp. 385-407. Reprinted in Vere Chappell (ed), *Hume: a Collection of Critical Essays*, 1965, Doubleday, Anchor Books, Garden City, New York: pp. 53-98.

Popper, Karl R.: 1972, *Objective Knowledge: An Evolutionary Approach*, Clarendon Press, Oxford.

Price, H. H: 1940, 'The Permanent Significance of Hume's Philosophy'. *Philosophy*, **15**, pp. 7-37; page references as reprinted in Alexander Sesonske and Noel Fleming (eds), *Human*

Understanding: Studies in the Philosophy of David Hume, 1965, Wadsworth, Belmont, California: pp. 5-33

Price, H. H.: 1969, Belief, George Allen & Unwin, London.

H. A. Prichard: 1950, Knowledge and Perception, Clarendon Press, Oxford.

Russell, Bertrand: 1912, *The Problems of Philosophy*, Butterworth, London.

Russell, Bertrand: 1945, A History of Western Philosophy, Simon and Schuster, New York.

Schmitt, Frederick F.: 1992, Knowledge and Belief, Routledge, London.

Schmitt, Frederick F.: 2004, 'Loeb on Stability and Justification in Hume's *Treatise*', *Hume Studies* **30**, pp. 297-327.

Stove, D. C.: 1965, 'Hume, probability, and induction', *Philosophical Review* **74**, pp. 160-177. Reprinted in Vere Chappell (ed), *Hume: a Collection of Critical Essays*, 1965, Doubleday, Anchor Books, Garden City, New York: pp. 187-212.

Stroud, Barry, 1977, Hume, Routledge & Kegan Paul, London.

Stroud, Barry: 1991, 'Hume's Scepticism: Natural Instincts and Philosophical Reflection', *Philosophical Topics* **19**, pp. 271-91. Reprinted in Margaret Atherton (ed.), *The Empiricists: Critical Essays on Locke, Berkeley, and Hume*, Rowman & Littlefield, Lanham, Maryland, 1999, pp. 229-252.

Will, Frederick: 1947, "Will the Future be like the Past?", Mind 56, pp. 332-347.

Williams, Michael: 2004, 'The Unity of Hume's Philosophical Project', *Hume Studies* **30**, pp. 265-296.

Winkler, Kenneth: 1999, 'Hume's Inductive Skepticism', in Margaret Atherton (ed.), *The Empiricists: Critical Essays on Locke, Berkeley, and Hume*, Rowman & Littlefield, Lanham, Maryland, pp. 183-212.

Winters, Barbara: 1979, 'Hume on Reason'. Hume Studies 5, 20-35.

Wolterstorff, Nicholas: 1996, *John Locke and the Ethics of Belief*, Cambridge University Press, Cambridge.