



Hume and Demonstrative Knowledge

Christopher Belshaw

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HUME AND DEMONSTRATIVE KNOWLEDGE

Little could be clearer than that Hume's sceptical arguments concerning induction and causation depend to some considerable extent on his contention that there can be no demonstrative arguments for matters of fact. An understanding of his use of the terms 'demonstration', 'demonstrative reasoning' etc., would seem to be a prerequisite for a satisfactory appraisal of those arguments. What is almost as clear, however, is that these terms have so far evaded much critical discussion and, with one notable exception, it seems to be assumed that we know well enough what they mean. That exception is David Stove, whose book on Hume¹ contains, among many good things, a boldly provocative discussion of these terms in relation to the sceptical argument. Stove has interesting things to say about the terms: I don't think that he is quite right, but then neither is he straightforwardly wrong. I shall present his account, and the one to which he is opposed, and then, after criticising both, I shall try to show why the truth lies elsewhere, and why we begin to approach Hume correctly only when we temper our fascination with the purely formal structures of argument.

I

Inductive scepticism is, of course, that scepticism which claims that there can be neither knowledge nor reasonable beliefs about unobserved matters of fact. Thus inductive arguments, those arguments which attempt to ground beliefs in unobserved matters of fact are, under this scepticism, claimed to

be bad arguments. Deductively valid arguments are, of course, often good, but it seems that they are unable to be utilised in justifying beliefs in unobserved matters of fact.² The problem of induction is thus that of explaining how these non-valid inductive arguments can be forceful, and Hume's scepticism about induction resides in his believing and arguing, or appearing to believe and to argue, that they cannot.

Hume himself does not, however, use the terms 'inductive', 'deductive' and their cognates. Some translation has therefore been employed in getting from his writings to the rough and ready sketch of the problem of induction as presented above. Stove spends some considerable time on this, and there is surely nothing wrong with his careful glossing of Hume's 'moral' and 'probable' arguments by our term 'inductive'.³ There are, however, good reasons to tread carefully where 'demonstrative' is concerned. Stove's remarks here are somewhat contentious, and before giving his version of what Hume's term means, I shall present what may be accounted the standard view.

While Hume does not use the term 'deductive', he does make frequent use of 'demonstration' and its derivatives,⁴ and he uses these in such a way as to suggest that a gloss via our term 'deduction' will not be far off the mark. Consider, for example, the following passage:

Our foregoing method of reasoning will easily convince us, that there can be no demonstrative arguments to prove, that those instances, of which we have had no experience, resemble those, of which we have had experience. We can at least conceive a change in the course of nature; which sufficiently proves, that such a change is not absolutely impossible. To form a clear idea of anything, is an

undeniable argument for its possibility, and is alone a refutation of any pretended argument against it. (T 89)

His point here seems to be that as alternative states of affairs remain possible, and are thus compatible with all the evidence upon which is based the hypothesis about continuing uniformity, it cannot be claimed that the persistence of such uniformity is established by argument. A similar account will be given of the following passage from the Enquiry:

When a man says, I have found, in all past instances, such sensible qualities conjoined with such secret powers: And when he says, Similar sensible qualities will always be conjoined with similar secret powers, he is not guilty of a tautology, nor are these propositions in any respect the same. You say that the one proposition is an inference from the other. But you must confess that the inference is not intuitive; neither is it demonstrative.... (E 37)

It is tempting to understand Hume here as once again rejecting the suggestion that from premises which refer exclusively to the past and the present there follows any conclusion about the future. So in these and similar passages Hume appears to be making the now standard and widely accepted point that there cannot be a deductively valid argument by which we can justify our beliefs in the uniformity of nature.

The demonstrative-deductive link is also supported by a modification in the Enquiry of a famous passage from the Treatise. The division (at the opening of Section XI of Part III) of human reason into the three categories of knowledge, proofs and probabilities is reduced in the Enquiry to a footnote to Section VI, and 'knowledge' is there replaced by

'demonstration'. Now 'proof' and 'probabilities' are both connected with our 'inductive arguments', and as we are inclined to divide arguments into two kinds, inductive and deductive, we may well assume that Hume was similarly motivated, and wanted to use this division to deal with species of argument.

Indeed, if Hume does not use 'demonstrative' for our 'deductive', then he completely fails to discuss one of these kinds of argument. It could be most implausibly argued that some other term does the work of our 'deductive', but the link between this and 'demonstrative' is suspiciously close. For deductive arguments are those in which the premises entail the conclusion, and in most of his discussion of demonstrative reasoning Hume is at pains to point out how, if propositions are the outcome of demonstrations, then we cannot deny them on pain of contradiction. And of course, given a valid deductive argument, then, insofar as we accept the premises, we cannot deny the conclusion except on pain of contradiction. Certainly we will find no term in Hume's writing which is closer to our 'deductive' than his 'demonstrative'.

Finally, there is the support of other writers. Most recent commentators render 'demonstrative' as 'deductive', or use the terms interchangeably with barely a quibble.⁵ And there is apparently support for the connection which predates Hume, for Descartes, in his "Rules for the Direction of the Mind" speaks not of intuition and demonstration, but rather of intuition and deduction in his discussion of the two routes to knowledge. This standard interpretation, then, is both well-supported and widespread.

II

But Stove's is a dissenting voice in all of this. He rejects the standard account, and urges instead that we interpret 'demonstrative' as referring to "a (valid) argument from necessarily true premises"⁶ and thus indicates that he believes that Hume's demonstrative arguments form a subset of deductive arguments in general. He claims that only on this reading will Hume be able to argue, as he does repeatedly, that there can be no demonstrative arguments for contingent matters of fact. He wants to find good sense in Hume's account, but suggests that given the standard reading this will not be easy. For that there can be no deductive argument for any matter of fact, any contingent proposition will strike us as thoroughly implausible. But, Stove insists, the standard reading of 'demonstrative' commits us to just this:

We almost always mean by it, especially if we use it as Hume so often does, in opposition to 'probable arguments', just that the arguments in question are valid. Our sense of 'demonstrative arguments' then, is purely evaluative, and quite independent of the kind of premisses the argument has.... But to suppose that Hume used 'demonstrative argument' in this sense would be to impute to him an error unbelievably gross and often repeated. For he would then be saying, each time he asserts that there can be no demonstrative argument for a matter of fact, that there cannot be a valid argument with a contingent conclusion! (Stove, pp. 35-36)

Stove thinks it obvious, then, that there can be deductively valid arguments with contingent conclusions. So, if 'demonstrative' just meant

'deductive', Hume's mistake, in denying the possibility of demonstrative arguments for matters of fact, would be huge.

Unfortunately, this is not as knock down as it purports to be. Stove claims that to impute the standard reading to Hume is to impute to him a gross error, but on his reading Hume is supposed to feel the need to insist, time and time again, on a bewilderingly trivial point. For it surely is a trivial point that if all the premises of a valid argument are necessarily true, then the conclusion will also be a necessary truth. Stove thinks that Hume feels the need to insist repeatedly that an argument form which can fairly clearly establish only necessary truths cannot be utilised to establish a contingent truth. Moreover, on Stove's reading of 'demonstrative' Hume simply fails to pay any attention to deductively valid arguments in general.⁷ This in itself would constitute a gross omission on Hume's part, and that fact must be weighed against his committing, on the standard interpretation, a gross error.

Now although the case for Stove's interpretation is not made out, it has some merit, even if it is only to focus attention on a relatively uninvestigated area of Hume exegesis. I shall acknowledge in the end that it has more merit than this, but first let me adduce additional support for his interpretation. I shall begin by looking again at two of the points I made above, in presenting the traditional interpretation of 'deductive'.

My reference to earlier use of the terms in question was quite inconclusive. Descartes does use 'deduction' rather than demonstration, but it would be unforgiveably foolhardy to conclude from this that he

is thereby discussing deductive arguments in our sense. For Descartes makes it plain enough that his concern is with valid arguments from premises which are either intuitively certain, or which are themselves the upshot of an argument of the kind in question. At rock bottom then, Descartes' 'deduction', like Locke's 'demonstration',⁸ is based upon the kind of knowledge we get from intuition. And intuitive knowledge is always, in our terms, a priori, and almost always, in our terms, necessary. Hume's illustrious predecessors, then, are fairly uncontroversially using 'deduction' and 'demonstration' not to describe valid arguments in general, but to refer, in something like the Stovean sense, to valid arguments based upon a priori knowable premises, and (more or less) necessarily true premises.⁹

My mentioning of Descartes' use of the term 'deduction' was not the only careless point in that earlier accounting for the standard reading of 'demonstrative'. I suggested there that the undeniability of the conclusion linked Hume's demonstrative with our deductive arguments. But there is an important difference, for while we cannot deny the conclusion of a deductive argument if we accept the premises, no corresponding conditional is required for demonstrative arguments if we interpret them in Stove's way. For if the premises of a demonstrative argument are necessary truths then the conclusion will also be a necessary truth and so in itself undeniable, except on pain of contradiction. The most we will want to say of deductive arguments in general, however, is that contradiction is involved in jointly asserting the premises and denying the conclusion. Denial of the conclusion alone will not normally involve contra-

diction. Hume, however, often seems to think that denying the conclusion of a demonstrative argument in itself involves contradiction, and this once more lends support to Stove's account.¹⁰

There is substantial support, then, for Stove's revisionist interpretation of 'demonstrative argument', as that phrase occurs in Hume. The criticisms which I levelled at Stove's argument in favour of his interpretation have, I believe, some bite, but, as it may well appear now that things are going his way, let me further redress the balance.

There is considerable reference, both in Hume and his commentators, to a priori inferences, or reasoning a priori. Now I find much of this dazzlingly obscure and the phrase itself open, at least at first blush, to two interpretations. An a priori inference may be said to occur either when we make a deductively valid inference for some item or items known to us a priori, or, more weakly, when we make a deductively valid inference from some item or items known to us, whether or not they are known a priori. If we interpret the phrase in the first, and stronger, sense, then while there will be a priori inferences in mathematics, for example, it will be a trivial truth that there are no a priori inferences from causes to effects, a trivial truth guaranteed by our not having a priori knowledge of the existence and nature of ordinary physical objects to begin with. For the sceptical cause is ill-served by remarking somewhat lamely that as we do not know a priori which billiard balls are where on the table, we cannot know a priori what will happen when two of them collide.

Hume is concerned with the weaker, and more interesting sense of reasoning a priori. That much is clear:

I shall venture to affirm, as a general proposition, which admits of no exception, that knowledge of this [causal] relation is not, in any instance, attained by reasonings a priori; but arises entirely from experience, when we find that any particular objects are constantly conjoined with each other. Let an object be presented to a man of ever so strong natural reason and abilities; if that object be entirely new to him, he will not be able, by the most accurate examination of its sensible qualities, to discover any of its causes or effects. Adam, though his rational faculties be supposed, at the very first, entirely perfect, could not have inferred from the fluidity and transparency of water, that it would suffocate him, or from the light and warmth of fire, that it would consume him. (E 27)

Here Hume is saying, gather as much experiential knowledge of the present status of the object as you might, still you will be unable to establish what it will do next. Thus he is quite clearly ruling out a priori knowledge even in the weak sense.

But what has this to do with 'demonstrative'? Well, we may suppose that that term too can enjoy a weaker, and so in the end more fruitful interpretation. If Hume thinks that there are no a priori inferences linking experienced causes with unexperienced effects, he may well think that there are no demonstrative arguments for the same, and as he rules out a priori inference, not just in the trivial sense, so the denial that there are demonstrative arguments will also not be trivial (brought about simply by its being the case that there are no necessary truths in

the offing) but will involve the more significant claim that we can construct no sound and valid argument from knowledge of causes, however that may be acquired, to knowledge of effects. We may suppose this, but in fact we have no need, for the position is plain enough in the Abstract, where talk about Adam is infected with talk about demonstration:

Were a man such as Adam, created in the full vigour of understanding, without experience, he would never have been able to infer motion in the second ball from the motion and impulse of the first. It is not any thing that reason sees in the cause, which makes us infer the effect. Such an inference, were it possible, would amount to a demonstration, as being founded merely on the comparison of ideas. But no inference from cause to effect amounts to a demonstration. (A 650)

It will not all go Stove's way, then, but it won't clearly go any other way either. Many of the passages which one might have expected would indicate Hume's considered opinion are thoroughly ambiguous with respect to these conflicting accounts, and it is extremely difficult to give conclusive support for either view.¹¹ So what I shall try to do is offer some indication of where these two interpretations of 'demonstrative' go astray, and in so doing provide some explanation of Hume's use of the term.

III

We can begin with that apparently clear-headed statement of Hume's fundamental divide which occurs at the opening of the section in the Enquiry, "Sceptical Doubts":

All the objects of human reason or enquiry may naturally be divided into two kinds, to wit, Relations of Ideas, and Matters of Fact. Of the first kind are the sciences of Geometry, Algebra and Arithmetic; and in short, every affirmation, which is either intuitively or demonstratively certain....

Matters of fact, which are the second objects of human reason, are not ascertained in the same manner; nor is our evidence of their truth, however great, of a like nature with the foregoing. The contrary of every matter of fact is still possible; because it can never imply a contradiction, and is conceived by the mind with the same facility and distinctness, as if ever so conformable to reality. That the sun will not rise to-morrow is no less intelligible a proposition, and implies no more contradiction than the affirmation, that it will rise. We should in vain, therefore, attempt to demonstrate its falsehood. Were it demonstratively false, it would imply a contradiction, and could never be distinctly conceived by the mind. (E 25-26)

At first glance this will appear to do little more than further Stove's view of things especially when, towards the end, demonstrative falsity is allied to contradiction. Furthermore, the overt linking of intuitive and demonstrative certainty with particular subject areas, notably those which deal exclusively with necessary truths, only advances the view that incompatibility between demonstrations and contingent matters of fact is rife.¹² What is emerging, then, is a supplementation to the standard empiricist distinction between two kinds of propositions, where demonstrative arguments are allied with the necessary, a

priori and analytic, while probable arguments partner the contingent, a posteriori and synthetic.

There is much more of interest in the passage than just this, however. For it at least raises, in remarking on the evidence for matters of fact, the question of whether genuine knowledge or certainty of any kind is the province of the first bundle alone, of Hume's true sciences, while we shall have to be satisfied with something less than certainty where matters of fact are concerned. The passage invites the question, then, of whether only necessary truths can be certain, while contingent truths are all merely probable.

Hume is confusing about certainty. He may also be confused. I shall make three suggestions as to what he may believe, and give three versions of where, for him, the certain/uncertain line may be thought to lie. I will not be able to say, in the end, which of these versions most forcefully recommends itself, but that is not vital here, for my present concern is not with which view of certainty Hume actually adopts, but rather with how each of the views he might maintain will affect accounts of demonstrative knowledge.

First, then, is the view that certainty is coextensive with a prioricity, or Hume's relations of ideas. The suggestion that we cannot be certain of any matters of fact occurs in more than one place:

All certainty arises from the comparison of ideas, and from the discovery of such relations as are unalterable.... (T 79)

If we would satisfy ourselves, therefore, concerning the nature of that evidence, which assures us of matters of fact, we must inquire how we arrive

at the knowledge of cause and effect.
(E 27)

There is no reference here to its being only un-observed matters of fact which depend on causal relations, and as to deal with causation is to deal with probabilities, there is at least the implicit suggestion, once again, that all contingent truths are uncertain truths.

Hume is far from consistent in subscribing to such a view, however, and at times it looks as though he wants to maintain that only where reason is involved is certainty about contingent truths proscribed. Insofar as we are willing to support Hume's view that reasoning about matters of fact is always probable reasoning, then to believe this is to hold the hardly unrespectable and not in itself radically sceptical view that inductive arguments cannot provide us with conclusions about which we can be certain. And Hume does for the most part speak as though direct present perception of ordinary physical objects, along with records of them preserved through memory is unproblematic, and will afford us genuine knowledge.¹³ He also makes a point of singling out reasoning processes as being worthy of special attention:

All kinds of reasoning consists in nothing but a comparison, and a discovery of those relations, either constant or inconstant, which two or more objects bear to each other. This comparison we may make, either when both the objects are present to the senses, or when neither of them is present, or when only one. When both the objects are present to the senses along with the relation, we call this perception rather than reasoning; nor is there in this case any exercise of the thought, or any action, properly speaking, but a mere passive admission

of the impressions thro' the organs of sensation. (T 73)

Here a reasoning/perception distinction is explicit,¹⁴ and although in this passage Hume expresses no reservations about inductive reasoning these find voice a little earlier when, after being most severe about geometry's shortcomings, he insists:

There remain, therefore, algebra and arithmetic as the only sciences, in which we can carry on a chain of reasoning to any degree of intricacy, and yet preserve a perfect exactness and certainty. (T 71)

I said that there were three views of certainty which might be ascribed to Hume. The third is perhaps best seen as a version of the second, in which a claim somewhat more cautious than that we can have knowledge of physical objects is advanced. For Hume may be thought to hold that we can be certain of present sense experience and memory only insofar as we construe it merely as experience, and that to infer on the basis of impressions that there exist some mind-independent physical objects is in itself to leave the sphere of the certain, and enter upon the merely probable.

We have some choices, then. We might hold that Hume thinks we can be certain only of a priori knowledge, or we might hold he thinks we can be certain of this along with knowledge of sense-impressions, or we might hold that he thinks we can be certain of a priori knowledge, sense-impressions themselves, and the existence of physical objects assured by present or past sense-impressions. Knowledge and certainty are in any event conspicuously absent where reasoning about matters of fact is con-

cerned, but that apart, I doubt if a consistent interpretation can be defended.

IV

Let me return to the discussion of demonstrative reasoning. I said that we were presented with a singularly unattractive dilemma. On a traditional account, where Hume's 'demonstrative' just is our 'deductive', then Hume is, as Stove says, guilty of the repeated making of some gross error. On Stove's revision, however, although the error is avoided its place is taken by the unforced reiteration of a simple point. We might think of this as a clear case of going straight from the frying pan into the fire. But armed with some understanding of Hume's position on, and concern with certainty, we can, I think, give a more attractive reading of 'demonstrative', whereby merit is seen to reside in both views.

Let me suggest that Hume has no purely formal concerns with patterns or structures of argumentation, but has instead a pragmatic interest in arguments as a means of extending our knowledge. Thus neither the standard view, nor Stove's revised account, both of which are indifferent to questions of knowledge, will be able to do him justice. And this is why a further suggestion, which by now may seem to have been lurking in the background, will also be appropriate. Hume's demonstrative arguments are not to be equated with our sound arguments. The suggestion has some merit, for a sound argument certainly has a more intimate connection with truth than does a deductive argument simpliciter, and it may have both contingent and necessary premises and conclusions. The offering of

'sound' as an interpretation of Hume's 'demonstrative' will therefore allow us to avoid some of the pitfalls in both of the competing accounts. But we will still fail to capture Hume's point, for a connection between soundness and truth does not yet establish the requisite connection with knowledge. Soundness will not do, for a) we may not know the premises of a sound argument are true, and b) we may already know that the conclusion is true. Either way, soundness will not possess the pragmatic and knowledge-extending force which I suggest Hume demanded of his demonstrative arguments.

We do not have to search too far, however, to find some term that is closely connected with Hume's 'demonstration'. For, surely, much of our ordinary talk of a proof, or proving something to be the case fits the bill. We might sometimes think that we should speak of proofs only in mathematics or geometry, but the term is properly used in scientific and legal parlance as well. It is not normally thought that one can prove only what is necessary, but it is thought that a proof is involved when something previously unknown is shown to be the case, and is thereafter incontestable. Proofs do have the requisite connection with knowledge. This, I think, is Hume's major concern, a concern with arguments as a means of furthering our store of knowledge, and hence a concern with those persuasive arguments which achieve this. Deductive arguments often promise to extend our knowledge, but they can fulfill this promise only if their premises are known to be true, and if their conclusions are not obvious all along.

Now we can begin to make sense of Hume's claim. Suppose, first, that he does believe that only

a priori knowledge, only intuitive knowledge of relations of ideas is certain. Suppose he does, that is, confusedly connect certainty with necessity, and hold that genuine knowledge is the province of his demonstrative sciences exclusively. Then it will be quite clear, I think, why he holds that there cannot be a demonstrative argument the conclusion of which assures us of a matter of fact. There will be no such argument, quite simply, because we cannot be assured of matters of fact anyway.

Suppose, however, that we do not make things too easy by opting for this version of his view about certainty, and hold instead that present matters of fact can be known with certainty. Still, I think, Hume will be left with a substantial point that he can make. In outline the point will be the same: that we cannot provide a deductively valid argument from premises of which we are certain to a conclusion about a matter of fact. Now, however, the claim amounts to the interesting one that whether the premises are necessary, or contingent, or a mixture of the two, no knowledge-enlarging manoeuvres will be possible. If all of the premises are necessary then they cannot provide us with a contingent conclusion: the argument will be obviously invalid. But the argument will be equally (though perhaps less obviously) invalid even if some premises are contingent, so long as we stick by the condition that they are certain. The claim would be, then, that if we set out only with items of which we are certain, then deductively valid arguments can only succeed in extending our knowledge if those certain items are also necessary.

Such a claim will be seen to straddle the shoulders of the two interpretations of 'demon-

strative' considered so far, and to sit comfortably on neither of them alone. For now this reading agrees with the standard view that there are no deductive arguments for unobserved matters of fact, and agrees too with Stove's claim that there are no deductive arguments with necessarily true premises for a contingent conclusion. But on this reading it is easy to avoid the unpalatable aspects of these interpretations: Hume is not claiming falsely that there are no deductive arguments with contingent conclusions, nor does Stove's point, though true enough, capture the full substance of the claim being made. For on my account, although it turns out that the only knowledge-extending deductively valid arguments will be those whose premises are necessarily true, that is an interesting fact in need of some explanation, and not a bald starting point. 'Demonstrative arguments' are then deductively valid arguments, whose conclusions give us new information about how things stand: it then turns out that they will be knowledge-extending only on the condition that all of their premises are necessary truths.

So, something that might appear to be a serious oversight, namely a failure to show much concern with deductive arguments whose premises are contingent truths, is in the end a well-founded omission. For, on top of the rather dubious status of a posteriori knowledge to begin with, there lies a well-founded suspicion that such knowledge cannot be furthered by argument. This, I suggest, is Hume's insight.¹⁵ For while we can construct deductively valid arguments with contingent conclusions for as long as it pleases us, they will suffer under one of two handicaps. Either their premises will not be

certain, as when we deductivise inductive arguments by means of some question-begging uniformity principle, or, if the premises are certain, the conclusion of the argument will tell us what we already knew. The mileage we can extract from deductive arguments with known premises, where at least one of the premises and the conclusion are contingent will never be very great.

This last point might not be immediately convincing. I do not propose to discuss it here, but suggest merely that it is not obviously false, and suggest also that this account of 'demonstrative', whether ultimately defensible or not, does have enough merit to warrant consideration as an explanation of what Hume's use of the term might have been. That there are no deductively valid arguments which can assure us of some hitherto unknown matter of fact is one substantive and not implausible claim, and that deductively valid arguments which do extend our knowledge will have necessarily true premises is another. Hume seems to have had a grasp of both, but we should take pains not to conflate them.

Christopher Belshaw
University of California,
Santa Barbara

1. David Stove, Probability and Hume's Inductive Scepticism, Oxford: Clarendon Press, 1973.
2. There are, of course, deductively valid arguments the conclusions of which deal in unobserved matters of fact, but such arguments typically require some premise asserting that nature is in all or in some relevant respects uniform. These arguments are hardly sound, then, as the uniformity of nature remains in question. Of course, we can give a deductively valid argument for a

uniformity principle (we can give a deductively valid argument for anything) but it is obviously more difficult to give such an argument which is also sound.

3. See Stove, op. cit., pp. 36-40.
4. There are numerous examples, even if attention is restricted to discussions of causation and induction. Thus, 'demonstration' (A 650, 652; T 31, 42-43, 161), 'demonstrative argument' (E 35; T 89), 'demonstrative reasoning' (E 35; T 72), 'demonstrative proof' (T 79). All references are from A Treatise of Human Nature, (cited as 'T'), including the Abstract, (cited as 'A'), ed. by L.A. Selby-Bigge, 2nd ed. revised by P.H. Nidditch, Oxford: Oxford University Press, 1978; and An Enquiry Concerning Human Understanding, (cited as 'E'), ed. by L.A. Selby-Bigge, Oxford: Oxford University Press, 1975.
5. See for example, Stroud, Hume, London: Routledge & Kegan Paul, 1977 (p. 54); Basson, David Hume, Harmondsworth: Penguin, 1958 (p. 71); Mackie, The Cement of the Universe, Oxford: Clarendon Press, 1974 (p. 18); Penelhum, Hume, London: Macmillan, 1975 (p. 41). (Stove's interpretation is endorsed by Beauchamp and Rosenberg, in Hume and the Problem of Causation, Oxford: Oxford University Press, 1981; and a similar reading, though not so clearly stated, occurs in MacNabb, David Hume, Oxford: Blackwell, 1966.)
6. Stove, op. cit., p. 35. In his recent book, The Rationality of Induction, (Oxford: Clarendon Press, 1986) Stove puts the same point with alarming succinctness: in denying that there can be demonstrative argument for a matter of fact, Hume is purported to be saying "in other words, necessary truths have no contingent consequences" (p. 4). All other references to Stove are from his earlier book.
7. This is in fact a singularly curious interpretation for Stove to advance. He is at pains elsewhere to insist upon Hume's deductivism, or Hume's (supposed) belief that the only good argument is a deductively valid argument. Now demonstrative arguments in Stove's sense are of course a subset of deductive argument in general, and so there is no straightforward inconsistency here, for Hume could be taken as insisting on

deductive validity merely as a necessary condition of an argument's being good. Nevertheless, if Hume is thought to maintain a far-reaching thesis about deductive arguments in general, it becomes even more surprising, first, that there is nowhere any reference to such arguments, and second, that he does nothing to correct the predictable error many will make of thinking that these arguments are the ones which we cannot use in connection with matters of fact.

8. Locke, An Essay Concerning Human Understanding, Book IV, Chapter 2.
9. The qualifications in this paragraph seem to me to be necessary. For it is arguable, first, that knowledge of some contingent truths, such as the knowledge of my own existence, is a priori, and second, that on a Cartesian perspective such knowledge is intuitive. Thus it might seem that a prioricity, rather than necessity is the more likely key to intuition and deduction/demonstration.
10. Various passages will appear to support this account. See, for some examples, E 26, E 35, A 650.
11. Perhaps one example of this will suffice. In the first, and the most extensive discussion of the failure of demonstrative arguments to be of use in discussions of causation (T 79), it is quite unclear whether Hume's point is that the causal maxim, or the claim that every event necessarily has a cause, cannot be proven, via a demonstrative argument, to be necessarily true, or whether it is that as it is not necessary, we cannot show, via a demonstrative argument, that it is true.
12. One suggestion as to the proper understanding of 'demonstration' surfaces here. It is sometimes urged that a demonstrative argument just is one that takes as its province a particular subject matter, as Hume suggests in the above quoted passage. But there remains the more attractive view that only within these disciplines can there be achieved the degree of certainty that a demonstrative argument requires. If it were analytic that nowhere else can there be a demonstration, then Locke's (and others') hopes for a demonstra-

tive ethics, like Hume's scepticism about the same idea, would look foolish.

13. See T 87-88, and E 26.
14. As it is again a little later, when Hume insists that "in all probable reasonings there be something present to the mind, either seen or remember'd," from which we infer "something connected with it, which is not seen or remember'd" (T 89).
15. Though not his alone. The suggestion I make here will help explain why Locke, after showing how items of intuitive knowledge can be compounded, via deductively valid arguments, to give demonstrative knowledge, fails to offer some corresponding account of how items of sensitive knowledge can be arranged together to some knowledge-extending manner.

HUME'S THEORY OF MOTIVATION

In this paper I shall defend a Humean¹ theory of motivation. But first I should like to examine some of the standard criticisms of this theory and some alternative views that are currently in favour.

Both in the Treatise and the Enquiry Hume maintains that reason alone never motivates action but always requires the cooperation of some separate, and separately identifiable desire-factor in order to bring about action. What are Hume's grounds for this view?

In the Treatise, Hume writes:

'Tis obvious, that when we have the prospect of pain or pleasure from any object, we feel a consequent emotion of aversion or propensity, and are carry'd to avoid or embrace what will give us this uneasiness or satisfaction.... 'Tis from the prospect of pleasure or pain that the aversion or propensity, arises towards any object....²

This passage suggests that the way we (and Hume) know about the presence of the separate desire factor which he claims is always needed to motivate our every purposive action is by being directly aware of some desire-feeling, by introspection, each and every time we act. There is however a familiar objection to this argument: no doubt we sometimes are aware of a feeling of desire when we act, e.g., in cases where we are motivated by strong emotions. But much of the time when we act calmly or casually, after having deliberated 'in a cool hour', or when performing routine and trivial acts, we are not directly aware of any desire-feeling at the time of action.