

The psychology and epistemology of Hume's account of probable reasoning

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Over Treatise 1.3, Hume presented what he called a 'system' of probable reasoning. He then went on, in Treatise 1.4, to argue that sceptical objections would leave us entirely incapable of belief were our natural inclinations not too strong for philosophical conclusions to be able to restrain our inferences. In the Enquiry concerning human understanding he reversed this procedure, first offering 'sceptical doubts' about the legitimacy of our inferences concerning matters of fact, then a 'sceptical solution of these doubts,' and finally a conclusion that we can only be legitimately sceptical of claims in religion and school metaphysics, not everyday experience or natural science

Despite the more optimistic tone, the theory of the Enquiry is built on the same two principles as the 'system' of the Treatise: the principle of the association of ideas, and the principle of the genesis of belief in the unobserved as a consequence of association with sensory experience or memories. The common 'system' of the Treatise and the Enquiry is sceptical because it takes our beliefs to be the product of naturally occurring psychological mechanisms and declares those beliefs to be ultimately unjustifiable. Despite this sceptical result Hume was able to provide for a logic of probable reasoning, grounded on natural, but unjustifiable beliefs. How he did so is still not well understood. That he was able to do so is one of his great achievements.

The System of the Treatise

All kinds of reasoning consist in nothing but a comparison, and a discovery of those relations, either constant or inconstant, which two or more objects bear to each other. [THU 1.3.2.2]

In the Treatise Hume's presentation and defence of his 'system' took the form of a torturous journey down the dead-end lanes and twisted turns of a meditative path of discovery, supplemented by appeals to observations and experiments, worries over contrary evidence, and the introduction of refinements to accommodate recalcitrant data. His project was to inquire into the basis of reasoning, particularly probable reasoning. Reasoning consists in inferring unknown from known objects by means of a relation between the two (THU 1.3.1.2, 1.3.2.2). The relations on which all reasoning is based are 'philosophical relations,' which are discovered by comparing objects with one another (THU 1.3.2.2). There are also 'natural relations.' A natural relation is not discovered by comparison or appealed to in order to discover or justify a conclusion. Whether we are aware of it or not, it exercises an influence on the imagination, impelling us to form an idea of an object. This produces a kind of instinctive, counterfeit reasoning (THU 1.1.5, cf. 1.1.4).

Relations can be divided into two main kinds: 'inconstant' relations, which can alter even while the compared impressions or ideas remain the same (e.g., relations of contiguity and distance in space or time); and 'constant' relations, which cannot change without a change in the compared objects (e.g., relations of resemblance). Demonstrative reasoning, yielding certainty, is founded on the latter while probable reasoning is founded on the former (THU 1.3.1.1-2, 1.3.2.1).

Though we discover a number of constant and inconstant relations by comparing objects, Hume maintained that there is only one relation that can serve as a basis for demonstrative reasoning, the relation of degrees in quantity, and only one that can serve as a basis for probable reasoning, the relation of cause and effect. The other constant relations can always be ‘intuited’ without the need of any demonstration and the other inconstant relations can only be ‘perceived’ and not used as a basis for inference to the unobserved (THU 1.3.1.2, 1.3.2.2). Thus all probable reasoning reduces to causal reasoning.

The Path to the First Principle

One of the infelicities of Hume’s presentation is this precipitate assertion that the causal relation is an inconstant relation, and the only relation on which probable reasoning can rest. Hume never adequately justified the latter claim.¹ A half-sentence argument for the former had been offered at Treatise 1.3.1.1: “the power, by which one object produces another, is never discoverable merely from their ideas,” though one might object that this amounts to little more than an assertion of the point to be proven. Hume returned to the question at Treatise 1.3.2.4, where he proposed to uncover the primary impression from which the idea of causality arises. His first observation on this topic was that our ideas of cause and effect could not be based on any of the observed qualities of objects because all objects are causes and effects, and there is no quality that all objects share in common. The idea must therefore be based on some relation or relations objects (THU 1.3.2.5).

This is not the best argument, which is perhaps why it was dropped from the Abstract and the Enquiry. It ignores the possibility that “cause” may be a generic term for a family of qualities, no one of which is shared by all objects. The fact that “there is no one [colour], which universally belongs to all [visible] beings, and gives them a title to [the] denomination” of being coloured does not imply that colour is not a quality of visible objects.

There is a much better reason for denying that cause or effect are perceived qualities of bodies: if they were, we would be able to tell upon first acquaintance with a body what its cause must have been and what its effect will be. But we can never do this — except in cases where the body is analogous to others whose causes and effects we have already learned about by some other means than a direct inspection. But while Hume alluded to this point much later (over the opening sentences of THU 1.3.6.1, where it ends up being employed for the importantly different purpose of arguing that causal relations are not demonstrable), he missed the opportunity to apply it here.

Hume’s inference that the idea of cause must be based on a relation raises a further infelicity. Hume simply assumed that causal relations are not directly perceived upon perceiving objects, as we perceive relations of contiguity — or, for that matter, immediately intuited upon comparing objects, as we immediately intuit relations of resemblance. Instead, he insisted without argument that they are ‘deriv’d’ from some other relation (THU 1.3.2.6). Once again, there is a good reason for this: we hesitate to affirm a causal relation to obtain on the basis of just one experience — and if we do not, it is only because the case bears some analogy to a number of others we have encountered previously. We would have no such hesitation if the relation were immediately perceived or intuited. But, once again, though this point comes up in other contexts (e.g., THU 1.3.2.11, 1.3.6.3), Hume missed the opportunity to apply it here.

¹ For a critique of such reasons as Hume gave (at THU 1.3.2.2), see Falkenstein, L. and Welton, D. ‘Humean contiguity,’ History of philosophy quarterly 18 (2001), 279-296.

Granting that causal relations are not immediately perceived but are instead derived from some other relations, what might those relations be? The only relations we discover when we compare those objects we consider to be causes and effects are contiguity in space and succession in time. But while these relations may hold between causes and effects,² they also hold between objects that we consider to be only accidentally conjoined. And, Hume claimed, we think that causes and effects are not just accidentally conjoined but necessarily connected.

This is tricky. How can we think that there is a necessary connection between causes and effects if we cannot discover any other relations between them than contiguity in space and succession in time? Occasional suggestions to the contrary notwithstanding,³ Hume did not want to say that we have no idea of necessary connection. A necessary connection is simply a connection that has to be present and cannot be broken. A harness is a connection between a horse and a carriage. If the harness had to run from the horse to the carriage and nothing could break it, it would be a necessary connection. The idea of a necessary connection between causes and effects is similarly the idea of a ‘tye ... which binds them together’ (EHU 4.10). Hume’s claim at this stage in his meditations was not that we aren’t thinking of anything when we think of a tie reaching across time and space to bind cause and effect together. It was rather that we can’t discover exactly what does the job. We only ever see the horse and the carriage. The apparatus harnessing the two together is not apparent. This does pose a problem: If we can’t discover any harness, why do we think it is there — indeed, that it must be there and cannot be broken?

Hume proceeded to further try the patience of his reader by pretending to have no answer to this question and affecting the need to look for one by investigating two related questions: i) why we consider it necessary that every event have a cause and, ii) what makes us draw the inference that a particular cause necessitates a particular effect.⁴ In response to the first, he argued that our belief that every event must have a cause could not be founded on intuition or demonstration and concluded that it must therefore be based on experience (THU 1.3.3). Oddly, he made no attempt to argue that the same answer must be given to the second question. As noted earlier, there is a good reason for thinking that causal relations are not intuited, but while it is implicit in things Hume said in other contexts it was not applied here. And it is only later (at THU 1.3.6.1) that a reason is given for concluding that our inferences from cause and effect are not based on demonstration. The reason goes back to an observation on the nature of imagination Hume made at THU 1.1.3.4: The only limitation on the imagination is that its ideas come from things that have been previously encountered in sensory experience. Once given ideas, it can separate and rearrange them in any way whatsoever. Given an object at a place and a time, the imagination can conceive any object whatsoever at any of the contiguous places at the earlier or later times. Since causes and effects exist at distinct times, any particular cause could be imagined to be

² Hume expressed some doubts about whether spatial contiguity and succession are always necessary for causality, but considered the question moot (THU 1.3.2.6 and 8).

³ THU 1.3.14.14 might be read as suggesting that we have no idea of necessary connection. But Hume’s concern there was not to deny that we have the idea of a connection, or even of a necessary connection, but just that we have the idea of what, specifically, connects causes necessarily to their effects.

⁴ The questions, and consequently Hume’s answers, have been misinterpreted. Hume was not asking why every event must have a cause or why some causes must have same effects. He was asking *what makes us consider* that every event must have a cause and *what makes us draw the inference* that this particular cause must have that particular effect. The metaphysical misreading of the questions goes back to William Wishart’s “specimen,” contested in A letter from a gentleman to his friend in Edinburgh (THU Letter 26, 29).

followed by anything and any particular effect preceded by anything.⁵ But were it intuitively obvious or demonstratively provable that this particular cause must have that particular effect, any other alternative would be inconceivable (THU 1.3.6.1).⁶

Postponing this argument, Hume (at THU 1.3.4), simply took it for granted that the connection between particular causes and their effects can only be known by experience and proceeded to ask what sort of experience does this. In the process, he presented himself as suddenly discovering a new, third relation obtaining in cases of causality (THU 1.3.6.2-3). The relation is not discovered when comparing individual instances of cause and effect, but only when comparing multiple instances. All instances resembling the cause are spatially contiguous with instances resembling the effect, and precede them in time.

Hume continued to express puzzlement over how this new relation of ‘constant conjunction’ could lead us to conclude that this particular cause must necessarily have that particular effect. We do not discover anything in multiple instances that could not be found in just one instance, and we do not discover anything in one instance that would justify the conclusion. Nor could we take the experience of a constant conjunction to establish the likelihood of a necessary connection, or the likelihood that the causes contain some quality, unknown to us, that gives them the power to bring about their effects.⁷ Since all we perceive are the observable relations between causes and effects, none of which is a necessary connection, and the observable qualities of the causes, none of which is a power, the most we could infer is that, in the past, objects like the cause have been contiguous to and followed by objects like the effect, and that, in the past, the set of qualities characteristic of the causes has included some further, unknown power. But we are in no position to infer that similar relations must obtain in the future or that similar collections of observed qualities will be accompanied by similar powers in the future (THU 1.3.6.8 and 10). The new relation of constant conjunction could only lead us to draw these inferences with the aid of a further supposition, that what has been observed to regularly occur in the past will continue to be observed to occur in the future. But this principle is not demonstrably true, because there is no contradiction in conceiving a change in the course of nature (THU 1.3.6.5). Moreover, it cannot be proven by appeal to past experience, because the question at issue is precisely why we should take regularities in past experience to establish a rule for what will happen in the future (THU 1.3.6.7).⁸

At this point in the course of his meditations, Hume finally felt prepared to reveal⁹ the first principle of the ‘system.’ Though constant conjunction provides us with no justification for

⁵ Combined with either an identification of objects with perceptions of objects (as at THU 1.4.2 or EHU 12) or an appeal to a conceivability criterion of metaphysical possibility (as at THU 1.4.5.5), this argument entails the independence of all objects occupying distinct locations in space and/or time, and so rules out the existence of necessary connections between causes and effects. The extent of Hume’s commitment to the metaphysical impossibility of necessary connections between causes and effects remains controversial. For discussion, see Beebe, H. Hume on Causation (London: Routledge, 2006) or the papers collected in Read, R. and Richman, K. A. (eds), The New Hume Debate (London: Routledge, 2000).

⁶ For more on Hume’s view of intuition and demonstration, see Owen, D. Hume’s Reasons (Oxford: Oxford University Press, 1999), ch.5.

⁷ At THU 1.3.6.9 Hume stressed that in allowing for the possibility of hidden powers he was making a concession to his opponent for the sake of argument, not admitting that the possibility is a real one.

⁸ The reader who has been keeping track of the references will note that I have juggled Hume’s order of presentation. This avoids the repetition of same arguments under different headings that mars the exposition of the Treatise.

⁹ Here what I have charitably described as a ‘meditative path of discovery’ takes on a rhetorical dimension. Prepare your reader to accept what you have to say by first inducing a deep sense of puzzlement. Then offer what you have

inferring that causes and effects are necessarily connected, it is a ‘natural’ relation, which impels the imagination to call up an associated idea when presented with its partner. It therefore produces a kind of counterfeit, instinctive ‘reasoning.’¹⁰ Observing objects of one sort being customarily followed by objects of another sort trains a habit of thinking into the mind. Once developed, the habit induces the imagination to form an idea of an object upon encountering its customarily conjoined partner, even in the absence of perceiving any tie binding the two together, even in the absence of having any reason to suppose that the future will be like the past, and even in the absence of any recollection of or reflection upon the past instances (THU 1.3.8.13). Though Hume did not draw the conclusion until very much later (THU 1.3.14), this is why, even though we can’t discover any tie that necessarily binds cause and effect together, we think that there must be such a thing.

The Path to the Second Principle

After this long journey of discovery, the second principle of the ‘system’ was quickly, though not easily, uncovered. Hume began by noting that causal inference only takes place when one of the two associated objects is experienced or remembered and the other is not. When both objects are experienced or remembered there is no occasion to imagine either. And when neither is either experienced or remembered, we feel impelled to imagine the one upon having occasion to imagine the other, but do not form any belief in the existence of either (THU 1.3.2.2, 1.3.6.2, 1.3.4).

Seeking for an explanation for this variation Hume noted that the objects of experience and memory are believed to exist (THU 1.3.5.7). This suggests that the belief we get as a consequence of causal association might be due to some sort of transfer from an experience or memory to an associated object. When an object is believed to exist or have existed, the relation of constant conjunction induces us to not just conceive an associated object but believe that object to exist at the contiguous place and the appropriately earlier or later time (THU 1.3.7.6).¹¹

Hume was discontent with this bald hypothesis and sought for a justification. At Treatise 1.3.8.2 he attempted to account for the origin of belief as a specific instance of something that can be observed to happen more generally: a natural tendency to confuse readily associated objects. Hume claimed that because the natural transition of thought between objects that have been constantly conjoined is ‘so easy,’ it goes unnoticed. Consequently, any mental ‘disposition’ that might happen to attend the latter gets attached to its impostor. Where the partner is experienced or remembered, the dispositions accompanying experience or memory are confused with the associated idea. Since those dispositions are always bound up with a belief in the existence of the experienced or remembered object, we end up believing in the existence of the associated object as well.

This account of the origin of belief is complemented by an account of the nature of belief, infelicitously inserted at Treatise 1.3.4-5, where it interrupts the thread of argument for the first

to say as a solution to the puzzle and trust to the reader’s sense of relief to induce acceptance of your solution, even in the absence of supporting argument.

¹⁰ Like necessary connection, the nature and role of reasoning in causal inference is controversial. For discussion, see Millican, P., Owen, D., and Garrett, D. in the symposia on Garrett’s Cognition and Commitment printed in Hume Studies 24 (1998): 141-159 and 171-194 and Philosophy and Phenomenological Research 62 (2001): 191-196 and 205-215.

¹¹ I here amplify on Hume’s actual statement. When discussing belief Hume did not mention the spatial and temporal contiguity conditions he previously identified as involved in the causal relation. This omission has momentous consequences, generating pseudo-problems, most notably at THU 1.4.2.21.

principle, and only completed at 1.3.7, after having been itself interrupted by 1.3.6. The account begins with an examination of the ‘impressions of the senses and memory,’ which are the apparent source of the belief based on causal inference. The relevant point about sense experience had already been made much earlier in Treatise 1.1. Any object that can be sensed can be imagined, so that the difference between sense experience and imagination cannot arise from what is sensed or imagined. Since there is nonetheless a difference, it must be due to something else. Hume referred to this other factor as a different ‘manner’ in which the object is conceived (THU 1.3.7.5), and tried to further describe this manner of conception by saying that sensing is more ‘forceful’ and ‘vivacious,’ imagining ‘fainter’ and ‘lower’ (THU 1.1.1.1, 1.1.1.3).

Turning to memory, Hume observed that anything that can be remembered can likewise be merely imagined, and concluded that the difference between what is received as a fantasy and a memory must consist just in the way it ‘feels’ to remember (1.3.5.3-5).

Having isolated these differences between sensing and remembering, on the one hand, and imagining on the other, Hume inferred that ‘the belief or assent, which always attends the memory and senses is nothing but the vivacity of those perceptions they present; and that alone distinguishes them from the imagination. To believe is in this case to feel an immediate impression of the senses, or a repetition of that impression in the memory’ (THU 1.3.5.7).

These reflections on the nature of sense and memory lead Hume to his conclusion. If the belief attending causal inference arises from a transfer from a sensed or remembered object to an imagined object, and if the belief in sensed or remembered objects is nothing but a more vivacious conception of those objects, then the belief attending causal inference must likewise be just a more vivacious conception of an object.

This is surprising. Rather than find belief in an unperceived object to be the product of a judgment, justified by appeal to a causal relation to an experienced or remembered object, Hume found it to be no different from the belief that attends sense experience and memory. It consists just in a more vivacious conception of the object. Perhaps because he sensed that this conclusion would not be readily accepted, Hume pretended to remain hesitant about it, offering two reasons for his hesitancy:

1. Accounting for the origin of belief involves identifying a cause. On Hume’s own account of causality, we can’t discover causes merely by inspecting their effects, nor can we be confident that we have identified causes if we have examined only one instance. Either we must find some analogy between the one instance we have before us and other instances and discover some regularity in the succession of events in the analogous cases, or we must show how some combination of more basic, previously established causes could account for the effect. The appeal made at Treatise 1.3.8.2 to a general tendency to confuse readily associated objects is a justification of the latter sort. But Hume went on to declare that, while he would be satisfied if his reader found this reason compelling, he himself placed his chief confidence in being able to uncover a justification of the former sort (THU 1.3.8.3; AX 3). He wanted to find analogies between the formation of belief as a consequence of experiencing or remembering an object that has been constantly conjoined with some other object in the past and other operations of the mind — something that would allow us to understand belief as a specific case of something that happens more generally. His search for these analogies had mixed results. They will be discussed later.

2. A more pressing problem is the characterization of belief. Four different characterizations of belief have emerged from what has been said about Hume’s account. At

Treatise 1.3.8.2, Hume described belief as a ‘disposition’ of the mind. Over Treatise 1.3.7.7 (from AX) and 1.3.8.2 these dispositions are further described as having to do with drawing and focusing attention (‘rendering more present,’ ‘weighing more in the thought,’ ‘having more force and influence,’ ‘appearing of greater importance,’ ‘fixing the attention’); arousing passion (‘elevating the spirits’); inspiring deliberation (‘having a superior influence on the imagination’); and inclining us to action. But Treatise 1.3.7.4-6 and 1.3.7.7 also describe belief as a ‘manner’ in which an object is conceived. A further characterization of belief is found at Appendix 3 and insertions to the Treatise from the Appendix (1.3.5.5, 1.3.7.7) where belief is described as a ‘feeling different from the simple conception’ of an object. Finally, and most notoriously, belief is described on numerous occasions in both the Treatise and the Appendix as a more forceful and vivacious idea, with the terms ‘force’ and ‘vivacity’ often being supplemented by a list of others (e.g., ‘solidity,’ ‘firmness,’ ‘steadiness’) that are not obviously synonymous, either with one another or with ‘force’ or ‘vivacity.’

The bare fact that Hume described belief in these different ways does not pose a problem as long as the different descriptions can all be integrated.¹² But Hume seems to have become worried that the frequent and prominent description of belief as a more forceful and vivacious idea had ‘not been so well chosen, as to guard against all mistakes in the readers’ (AX 1). Perhaps this was because he found readers inclined to take ‘force and vivacity’ to refer to some qualitative feature of the object that is conceived, like brightness or distinctness, rather than, as he had all along wanted to insist, a ‘manner’ in which we conceive this object, specifically, a conception with focused attention, aroused passion, and an impetus to deliberation and action — these being ‘dispositions’ of the mind that are ‘felt’ even when not acted upon and so not made evident to others. In the Appendix and insertions to the Treatise proposed in the Appendix Hume stressed that by ‘force and vivacity’ he had meant conception of an object in this ‘manner’ — conception attended with these dispositions.

But Hume also confessed that he found ‘a considerable difficulty in the case; and that even when I think I understand the subject perfectly, I am at a loss for terms to express my meaning.’ What may have bothered him was that appealing to ‘dispositions of the mind’ to explain belief does not sit well with what he was to go on to say about the nature of minds and mental acts (in THU 1.4.6 and 1.4.5.26-27). This pushed him in the direction of taking belief to be a feeling (presumably, the feeling of having one’s interest aroused, one’s passions elevated, and one’s inclinations determined), and in turn prompted worries about whether the feeling might be separable from the conception (denied over AX 4-8, but affirmed at EHU 5.11). But that Hume took the presence of the dispositions to be what is ultimately constitutive of belief, and the feelings of being so disposed to be merely introspective evidence for the presence of the dispositions — and, importantly, evidence that is defeasible — is suggested by Treatise: 1.3.9.13 and 14.¹³

¹² An integrated account of the four features is presented at THU 1.3.7.7.

¹³ THU 1.3.10.10 (from AX) grapples with a further problem that might have exercised Hume: works of fiction focus attention and arouse passions without prompting belief. For further discussion of the problems with and prospects for including mental dispositions within the larger framework of Hume’s theory, see Bricke, J. Hume’s Philosophy of Mind (Princeton: Princeton University Press, 1980), ch. 3; Everson, S. ‘The difference between feeling and thinking,’ Mind 97 (1988), 401-413; Loeb, L. Stability and justification in Hume’s Treatise (Oxford: Oxford University Press, 2002), pp. 60-100; and Smalligan Marušić, J. ‘Does Hume hold a dispositional account of belief?’ Canadian journal of philosophy 40 (2010), 155-183. For further discussion of Hume’s ambivalence about his account of belief see Bell, M. ‘Belief and instinct in Hume’s first Enquiry,’ in Millican, P. (ed), Reading Hume on Human Understanding (Oxford: Clarendon Press, 2002), pp. 175-185.

Whatever frustrations Hume may have had with his efforts, it is clear that he meant to reject the view that to believe is to perform an act of assenting to a proposition, where a proposition involves asserting a relation between two or more ideas. In particular, to believe that something exists is not to assent to a proposition joining the idea of that thing to the idea of existence. Hume rejected this possibility by arguing that we have no idea of existence distinct from whatever particular thing we conceive to exist. To conceive something as existing is no different from conceiving it (THU 1.2.6.2-6; 1.3.7.2; Appendix 2). He offered the ineligibility of this account of belief as a further reason to accept the alternative that to believe is just to sense or remember or be instinctively inclined to form a more vivacious idea.

In a footnote, Hume went so far as to describe the division of the acts of understanding into conception, judgment, and reasoning, and the definitions given of these operations as a ‘remarkable error.’ These three acts of the understanding ‘all resolve themselves into the first, and are nothing but particular ways of conceiving our objects’ (THU 1.3.7.5n). This is an overstatement, since Hume did recognize that we do things like compare objects with one another to discover relations between them, or do arithmetical demonstrations in which one thing is inferred from another by appeal to a relation between the two. Indeed, as will be noted below, Hume went so far as to recognize a class of ‘oblique’ or ‘explicit and indirect’ causal inferences that are demonstrative in the classic sense. These operations satisfy the definition of judgment as the ‘separating or uniting of different ideas,’ and of reasoning as the ‘separating or uniting of different ideas by the interposition of others, which show the relation they bear to each other’ (T 1.3.7.5n). The received definitions of judgment and reasoning apply to those operations that are constitutive of knowledge in the demonstrative sciences, particularly arithmetic, and knowledge of intuitive truths, such as that orange is more like red than green.¹⁴ They even apply to many of the judgments and arguments found in the empirical sciences. But they do not describe all of those operations that are constitutive of belief in the empirical sciences or in everyday life. In particular, they do not describe the most fundamental of those operations. We form fundamental beliefs neither by discerning relations between ideas nor by inferring one idea from another by appeal to an intermediate relation. Instead, we form fundamental beliefs by having lively conceptions given to us in sensation and memory, or by being instinctively compelled to form lively conceptions as a consequence of association with what is sensed or remembered. The latter is ‘not only a true species of reasoning, but the strongest of all others’ (THU 1.3.7.5n).

The Argument of the Abstract and the Enquiry

Hume came to be dissatisfied with the rambling quasi-meditative, path of discovery he had dragged his reader down when presenting his ‘system’ in the Treatise. The Abstract and the Enquiry offer a far more elegant presentation of the same theory.¹⁵ They replace the opening

¹⁴ Hume was later to argue that intuition and demonstration reduce to probability (THU 1.4.1). But even then his claim was not that we do not intuit relations between ideas or demonstrate truths in mathematics by appeal to a chain of intuitions. It was that because we sometimes have the wrong intuitions, our assurance in the results of a demonstration has to be informed by considerations of how likely it is that we are mistaken. Intuition and demonstration do not ‘reduce’ to probability in the sense of turning out to just be more vivacious conceptions of an idea. They ‘reduce’ to probability in the sense of presupposing second-order beliefs about the reliability of our intuitive judgments. My intuitive judgment that eight plus seven is fifteen has no vivacity. My belief that I have correctly intuited this relation does.

¹⁵ This view of the relation between the works is controversial. For an opposed view see Millican, P. ‘The context, aims and structure of Hume’s first Enquiry’ in Millican, P. (ed), Reading Hume on Human Understanding (Oxford: Clarendon Press, 2002), pp. 27-65, esp. pp. 40-48.

discussion of the foundations of probable reasoning with the question of how we reason concerning ‘matters of fact’ or existence. Like the Treatise, they leap to the conclusion that this can only be done by means of causal inference. Unlike the Treatise, they do not proceed to analyze the causal relation in terms of a problematic notion of necessary connection. The Abstract analyzes causality in terms of contiguity in space, succession in time, and a constant contiguity and succession in like instances, making no mention of necessary connection. The Enquiry offers no analysis of the causal relation at all, though there are passing references to a ‘supposed’ tie or connection between cause and effect (EHU 4.4, 4.10). In both works, necessary connection, which had played such a large role in the Treatise, only comes up for discussion after the two parts of the ‘system’ have been presented. Rather than investigate the notion of necessary connection, Hume directly proceeded to ask what leads us to infer causes from effects and effects from causes.

He first claimed that we cannot do this in advance of experience, by reference to anything we can find in those objects we consider to be causes or effects. In contrast to the scattered, sketchy, unconvincing, and ill-placed arguments of Treatise 1.3.1.1, 1.3.2.5, and 1.3.6.1 his conclusion was now justified by two different lines of argument. First, Hume appealed to everyone’s experience, particularly of novel cases, assisted by appeal to a thought experiment invoking the Biblical Adam, newly created with fully functioning, adult cognitive capacities, but no experience. Just as Adam would be unable to say what the effect of any given cause would be prior to experience, even the effect of the motion of one billiard ball towards another, so we find ourselves unable to say what the effect of a cause will be or what the cause of an effect was in novel cases (AB 11; EHU 4.6-7). If we think that we do perceive causal powers in more familiar cases, it is only because we have forgotten what it was like to experience these things for the first time (EHU 4.8). And while we do often anticipate how events will turn out in novel situations (scientific experiments being the prime example), the demonstrations that we employ when doing so appeal to fundamental causal rules (cohesion, gravitation, communication of motion by impulse, etc.) that are not intuitively or demonstrably obvious, which begs the question of how we have obtained the idea of these fundamental causal relations (EHU 4.12).

Second, Hume appealed to variations on the argument of Treatise 1.3.6.1.:

- According to Abstract 11, effects ‘follow’ from causes. Consequently, given any cause existing at one time, we can conceive any other object to exist at the following time. But when something is demonstrable, the opposite is contradictory and inconceivable.
- According to Enquiry 4.8-11, every effect is a different event from its cause. Consequently, when conceiving the one it is not necessary that we also conceive the other. If we do conceive them together we are conscious that nothing compels us to do so, so that the conjunction is effectively arbitrary. But this means that there can be no demonstration of effects from causes or causes from effects, again because where there is a demonstration the opposite is inconceivable (EHU 4.8-11).

The version of the argument in the Abstract omits reference to the power of the imagination to separate different objects, but it obviously rests on that assumption and it also makes more explicit appeal to the principle that ‘whatever we conceive is possible, at least in a metaphysical sense’ (A: 11). Like the earlier argument from Treatise 1.3.6.1, this appears to rule out the possibility of there being any such thing as a necessary connection between the two. In contrast, the version of the argument in the Enquiry omits any reference to conceivability as a criterion of metaphysical possibility.

Having established that reasoning from causes and effects is based on past experience, the Abstract proceeds to argue that any reasoning from that experience would have to depend on the principle that the future will be like the past. But i) this principle is not demonstrably true, since a change in the course of nature is conceivable. And ii) any attempt to prove that it is likely true would run in a circle, since we could only appeal to the fact that it has been true in the past to argue that it will likely continue to be true in the future. Even were we to take a constant conjunction in past experience to be evidence of the existence of a power in causes to bring about their effects, we only perceive the sensible qualities of bodies, and we can have no assurance that like sensible qualities will continue to be conjoined with like powers.¹⁶

The Enquiry, mounts the same argument, but addresses it to a different question — not the question of why we suppose that the future will be like the past, but the question of why we suppose that like objects contain like hidden powers (EHU 4.7). This is not an innovation, because the same question had been raised in the Treatise (at 1.3.6.8-10) and the Abstract (at 15), though only as an afterthought,¹⁷ and reference to a supposition that the future will be like the past does come up in the Enquiry over the subsequent course of the argument (at 4.19). In addition to giving the usual reasons for a negative answer, Hume also offered a new argument: since peasants, infants, and animals are able to infer effects from causes, either they do not do so by means of any argument or demonstration, or only by means of the simplest and most obvious of reasons. Yet, unless Hume was more obtuse than a peasant or child, there are no such reasons.¹⁸

Having raised these ‘sceptical doubts about the operations of the understanding’ the Abstract and the Enquiry proceed to offer a ‘sceptical solution of these doubts’ — the same, two part solution that was presented in the Treatise. First, our experience of what has customarily been the case in the past trains habits of thought into us, so that we naturally expect same sorts of things to happen in the future. The expectation is not rationally justified, but naturally induced. Again, the Enquiry adds a new and compelling argument for this conclusion: attributing the inference to habit offers the only plausible explanation for how it is that we come to draw a conclusion from many experiments that we would not draw after seeing just one.

Second, we do not just infer causes and effects from one another but believe the absent partner to exist (at the contiguous place and the appropriately prior or posterior time¹⁹). Because this belief does not arise from reasoning, but from habit, it is declared to be due to ‘a species of natural instincts, which no reasoning or process of the thought and understanding is able, either to produce, or to prevent’ (EHU 5.8).

The Abstract and the Enquiry go on to examine what belief is, reaching the same conclusions as the Treatise and, in the Enquiry, even stating them by means of an extended quotation from the Treatise (EHU 5.12, quoting THU 1.3.7.7 with minor modifications). Interestingly, in the Enquiry these further details about belief are set off in a distinct part of Enquiry 5, prefaced by a remark dedicating the part to ‘such as love the abstract sciences, and can be entertained with speculations, which, however accurate, may still retain a degree of doubt

¹⁶ Unlike the Treatise, the ‘Abstract’ contains no explicit pronouncement to the effect that in speaking of ‘The powers, by which bodies operate,’ Hume was indulging common but false ways of thinking (cf. THU 1.3.6.8-10). In contrast, the parallel discussion in the Enquiry contains a qualification, this time occurring in a footnote, to the effect that the talk of hidden powers is ‘loose and popular’ and that a ‘more accurate explication’ of the notion would further buttress the conclusion to be drawn here.

¹⁷ As noted earlier, the exposition of the Treatise is made more elegant by bringing this afterthought forward.

¹⁸ Compare T 1.3.16, which appeals to the abilities of animals as a further reason to accept the account of belief.

¹⁹ As in the Treatise Hume continued, in both the Abstract and the Enquiry, to omit this important detail.

and uncertainty.’ ‘Readers of a different taste’ are told that the part may be neglected without impairing an understanding of subsequent portions of the book (EHU 5.9).

Enquiry 5.ii is nonetheless important. As Hume stressed in the same breath in which he advised ‘readers of a different taste’ to move on, delving into the question of what belief is and how it arises will uncover ‘explications and analogies that will give satisfaction.’ The ‘satisfaction’ Hume had in mind is not just the satisfaction of idle intellectual curiosity, but the satisfaction of objections to the account of belief laid out in the concluding paragraphs of Enquiry 5.i. A concern with uncovering ‘analogies’ between the account of belief and other operations of the mind is a constant of Hume’s thought about his ‘system’ (cf. THU 1.3.8.3; AX 9; AB 23), for good reasons that have already been alluded to. There is very little positive argument to justify Hume’s ‘system.’ The meditative path of discovery of the Treatise offers only rhetorical support,²⁰ and the Abstract’s and Enquiry’s effective reconstruction of that path into a critique of the view that our causal inferences are justified by appeal to facts and rules at best put Hume in a position to claim that causal inference is not based on reasoning, not to claim that it is based on a habit of association and a transfer of belief from an impression or memory. The same can be said of a new argument, presented only later, to the effect that reasoning is too slow and uncertain in its operations to be entrusted with an operation as important for survival as causal inference (EHU 5.22) and of the Enquiry’s appeal to the abilities of peasants, children, and animals to draw causal inferences. The one positive argument for the theory presented so far is the Enquiry’s appeal to the problem of how we draw a conclusion from repeated experiments that we cannot draw from just one, and that argument offers a justification of the least satisfying sort: inference to the best explanation. Hume hoped that by uncovering ‘analogies’ between belief and other operations of the mind he would be able to offer a more compelling, Newtonian argument by induction from the phenomena to a general rule. The general rule would provide justification for the two-part system, as a special case, but it would in turn be supported by induction from all the analogous cases revealed by experience.

However, Hume had come to think that the public had no taste for this sort of investigation, particularly if drawn out to any great length (Ab Preface: 1-2). His solution was to drastically abbreviate the argument, focusing just on the exposition of analogous cases, and to invite impatient readers to skip ahead. In the Treatise he went on at much greater length, not only identifying analogous cases, but worrying about contrary evidence, refining the system to account for it, and appealing to the system to account for a wide range of other phenomena, thus adding a demonstration of explanatory power to the other reasons for accepting the system. Because the Enquiry merely repeats some of what the Treatise had to say on this score,²¹ I focus on what Hume had to say in the Treatise in what follows.

Analogies, Experiments, Recalcitrant Data, Refinements

In both the Treatise (1.3.8.3-5) and the Enquiry (5.15-18 — the relevant passages are identical in both) Hume noted the following ‘analogies’ between causal inference and other operations of the mind: the picture of an absent friend ‘enlivens’ the idea of that friend, as well as the passions that idea occasions; the ‘mummeries’ of the Roman Catholic religion ‘enliven’ devotion; ‘sensible types and images,’ which have a greater influence on the fancy than any other, ‘convey that influence’ to the ideas they resemble; objects that are placed in the vicinity of

²⁰ See note 8 above.

²¹ The interested reader is invited to consult THN-C: lxx-lxxvii, which represents the extent of Hume’s quotations from the Treatise in Enquiry 5.ii and his modifications to those passages.

other objects ‘transport’ the mind ‘with a superior vivacity’ to ideas of those other objects (e.g., passing the house next door on my way home gives me an idea of my home that ‘imitates an immediate impression’). Importantly, in all of these cases the trigger (the picture, the ceremony, the icon, the neighbouring objects) must be both experienced and ‘naturally related’ to the target (in the cases mentioned, by relations of resemblance or contiguity); if the trigger is merely imagined the target is not enlivened; if the trigger is unrelated, the idea of the target does not even arise.

The case is the same with causal inference, as Hume proceeded to prove by appeal to three experiments (THU 1.3.8.8-11): suppose the natural relation (in this case of constant conjunction) is absent (as, for example, when experiencing a cause for the first time). Then the associated idea does not arise. Now suppose a constant conjunction between the trigger and the target has been experienced in the past. Then, solely for that reason and without the assistance of any intermediate process of argument or justification or appeal to general rules, a vivacious idea of the target arises upon experience of the trigger. Now suppose the trigger is not experienced but only imagined. Then the associated idea does arise, but it has no vivacity.

By induction from all these phenomena, Hume declared it to be ‘a general maxim in the science of human nature, that when any impression becomes present to us, it not only transports the mind to such ideas as are [naturally]²² related to it, but likewise communicates to them a share of its force and vivacity’ (THU 1.3.8.1)

This maxim was no sooner justified than Hume acknowledged a difficulty. He had defined belief to be nothing but a more ‘vivacious’ idea. But he had also maintained that belief only arises from causal inference, not from the other natural relations of resemblance and contiguity, notwithstanding that, according to the maxim, they all enliven ideas. The three claims are inconsistent (THU 1.3.9.2).

At this point Hume stood on the brink of momentous discoveries, presented with an opportunity to reassess his earlier, ill-considered position that belief in matters of probability can only arise from causal inference. He had discovered that basic causal inferences are inferences from the constancy of temporal succession in resembling cases. But we also draw inferences from the constancy of spatial arrangement in resembling cases. Quite apart from forming any background beliefs about the causes of the immobility of landmarks, we rely on the constancy of the position of houses, trees, the pole star, and other geographical or astronomical objects to navigate, and when we do so we reason from experienced objects to their unperceived surroundings, not to their unperceived causes or effects.²³ Hume himself recognized this without realizing it when he wrote:

Suppose I see the legs and thighs of a person in motion, while some interpos’d object conceals the rest of his body. Here ’tis certain, the imagination spreads out the whole figure. I give him a head and shoulders, and breast and neck. These members I conceive and believe him to be possessed of. [AX 4]

²² This is obviously intended.

²³ Objects can of course move around. But just as we don’t assume that two objects are relatively immovable upon having once seen them alongside one another, so we don’t assume that they are causally related upon once having seen them in succession. And just as the bare experience of a constant conjunction in time suffices to impel us to associate them independently of any further justification by appeal to secret powers producing a necessary connection, so the bare experience of a constant conjunction in space suffices to impel us to associate them independently of any further justification by appeal to the causes of their mobility or immobility.

Since the head, shoulders, breast, and neck are neither causes nor effects of the legs and thighs, the inference here is not causal, even though Hume recognized that it produces belief. The same holds of Hume's description of 'our approach to any object; tho' it does not discover itself to our senses' as leading that object to operate on the mind 'with an influence that imitates an immediate impression' (THU 1.3.8.5). An 'influence that imitates an immediate impression' just is a belief.

The case of resemblance poses more of a problem. Seeing the son of a long dead friend (EHU 5.19) does not produce a belief in the existence of an unperceived object. At best, it rouses old memories and enlivens the associated passions.²⁴ One reason for this is that the resemblance relation calls up an idea of a resembling object without giving any further indication of where that object is placed in space and time, leaving us with no inclination to ascribe it a location in the real world. Our causal and geographical inferences, on the other hand, involve not just association of objects, but association with places and times where the object is to be found. Not surprisingly, therefore, when resemblance is bound up with relations of time and place, it has the same influence as constant succession in time and constant conjunction in space. This is most notably the case with our beliefs about the identity of objects over time, where we suppose a continuum of intermediate states to exist unperceived between observed, resembling earlier and later states.

This is just a sketch of how Hume might have gone on to investigate the possibility that probabilistic reasoning involving all three of the 'inconstant' relations of causality, contiguity, and identity could be grounded in the three 'natural' relations of constant succession in time, constant conjunction in space, and closest resemblance at contiguous places over time.

Unfortunately, Hume did not take this path. (Treatise 1.4.2.15-23 is perhaps the most lamentable consequence of that decision.) He did go so far as to declare that we take our sense experiences and memories to constitute a 'system' of 'realities,' and that we join a second 'system' to it, consisting of the unperceived causes or effects of these 'realities' (THU 1.3.9.3-4). But he never paused to consider that what makes the objects of the senses and memory a 'system' is that each is related to all the others in virtue of its unique location in a single space and time, and that what enables the causal relation to augment the system is that it directs us where to localize unperceived objects in this space and time — something that constant contiguity and resemblance insofar as it is bound up with identity relations could do as well.

Instead, Hume maintained that because any given object resembles and is spatially contiguous to a huge variety of other objects, the mind senses a certain 'caprice' or feeling of liberty in making the association with just one. This feeling of liberty prevents the easy and unnoticed transition from one object to another that Hume had earlier identified as essential for the transfer of the mental dispositions characteristic of belief. It also introduces new feelings of 'looseness' and 'weakness' that are contrary to the feelings of stability and strength characteristic of belief. Moreover, any tendency we might have to include objects thought of under these conditions in the system of 'realities' would produce repeated experiences of having our expectations disappointed. As a consequence, we would learn to associate objects thought of under these conditions with fictions (THU 1.3.9.6).²⁵ Causal relations are very different. Any

²⁴ The effect of resemblance in raising religious devotion is of this sort. The icons and ceremonies enliven an antecedent belief in the past existence of people and events, the exception being that in this case the antecedent belief is grounded on testimony rather than memory. Belief is only enhanced by the experience of the icon or ceremony, not created.

²⁵ This is the first appearance of the important notion of correction by appeal to general rules

given object is related to just one other object as its cause and just one other object as its effect, so there is no ‘looseness’ to the association.²⁶

These reflections mandate a revision to Hume’s maxim, though he never said so. While impressions may transport the mind to any ideas that are naturally related to them, they only communicate a share of their force and vivacity sufficient to induce belief to ideas of those objects that have been customarily conjoined with them in the past.

This revised maxim explains an attempt at ‘confirmation’ of the ‘hypothesis’ that Hume made at Treatise 1.3.9.16-19. The attempt appeals to an example that would otherwise serve more to falsify than confirm the hypothesis. If the repetition of a conjunction (making it ‘customary’) plays a more important role in producing belief than the force and vivacity of the impression, and if belief is a mental ‘disposition’ involving things that can be produced merely by repetition, such as fixed attention, familiarity, and stability of the object, then we should expect that belief could arise from the mere repetition of an idea even in the absence of association with an impression or memory. Hume considered this to in fact be the case, most notably with the beliefs produced by education, which he considered to provide outstanding confirmation for the hypothesis because, as he claimed, education is responsible for more than half our opinions and is more influential than either abstract reasoning or experience (THU 1.3.9.19). He also instanced the tendency of amputees and the bereaved to be unable to accept their loss, and of people to consider themselves to be on intimate terms with personages they have only read about. It is hard not to wonder about the aptness of these examples or the soundness of Hume’s implicit view of how education produces belief, but people do have a tendency to believe what they hear from those around them simply because everyone is saying it and even though no one is in a position to testify to the truth of what they are saying (the belief in an afterlife being an outstanding example).

Besides this appeal to a confirming experiment, Hume justified the hypothesis by appeal to its explanatory power (THU 1.3.9.9-15). The hypothesis is able to explain such things as i) why pilgrimages strengthen belief; ii) why it is wrongly supposed that the communication of motion by collision could be anticipated in advance; iii) why we have a much more vivid conception of the vastness of the ocean from vision than from hearing; iv) why we are credulous, even in the face of contrary experience; v) why we can’t take the infinite rewards and punishments of an afterlife seriously, even if we believe in them; and vi) why we enjoy religious discourses and dramatic performances that excite the disagreeable passions of fear and terror. In all of these cases the explanation is the same. Though the natural relations of contiguity and resemblance are not able to produce belief on their own, when a belief has once been formed, so that there is no sense of ‘caprice’ in its conception, it will be further enhanced by relations of contiguity (i) and resemblance (ii-iv) holding between the impression and the idea, but also weakened by the opposite relation of dissimilarity (v, with the weakening of belief in turn accounting for vi).

²⁶ This attempt to distinguish causality from contiguity and identity is a failure. When one adds a specification of direction and distance to contiguity relations, and of temporal distance to identity relations, they become as restrictive as causal relations. Any given object is causally related to a huge number of others as well, if we do not consider whether the objects lie in the direction of cause or effect, or distinguish between proximate and remote causes and effects.

The Psychological Foundations of Epistemological Normativity

Taken together, the two parts of Hume's 'system' would appear to rule out any role for logic in probabilistic inference — any role for the conscious, deliberate, application of demonstrably truth-preserving or probability-preserving rules to draw inferences from the observed to the unobserved. We do not discern a relation between causes and effects by comparing them with one another and then appeal to this relation to draw inferences to the unobserved. Instead, we are instinctively impelled to form ideas of objects of a sort that have in the past been frequently observed to be constantly conjoined with currently sensed or remembered objects, doing so in the absence of any memory of those past occasions or conscious inference from them (THU 1.3.8.13). And we do not judge that these objects must exist but are instinctively impelled to form a more 'lively' conception of them — a conception that 'gives them more ... influence; makes them appear of greater importance; infixes them in the mind; and renders them the governing principles of all our actions' (THU 1.3.7.7).

These are results that Hume trumpeted in both the Treatise (1.3.8.12) and the Enquiry (5.8), writing that because objects have no discoverable connection with one another, we can only draw an inference from the one to the other with the aid of 'custom operating on the imagination,' and that 'all probable reasoning is nothing but a species of sensation,' so that when we prefer one argument to another we do nothing but decide from our feelings concerning the superiority of their influence, meaning that belief is 'a species of natural instincts, which no reasoning or process of the thought and understanding is able, either to produce, or to prevent.'

In the Enquiry, Hume pretended that even though our beliefs are not drawn from observation in accord with truth-preserving or probability-preserving rules, there is a 'pre-established harmony between the course of nature and the succession of our ideas' ensuring that beliefs will be produced in us in tandem with the way causes and effects succeed upon one another in nature, and providing 'those who delight in the discovery and contemplation of final causes' with 'ample subject to employ their wonder and admiration' (EHU 5.21). This is a singular instance of misdirection, inconsistent with the candour that is otherwise characteristic of his work. It is not just that, on his account, there could at best be a pre-established harmony between the past course of nature so far as it has been observed by us and the succession of our ideas. Hume's account entails that there shouldn't even be that much.

According to Hume's theory, belief is a more vivacious idea resulting from association with an impression or memory. It therefore depends on the original vivacity of the impression or memory and the strength of the associative link between the impression or memory and the idea. If either of these is weakened, the belief will be as well. But, as Hume observed in the Treatise, an impression is more vivacious than a memory, and a recent memory more vivacious than an older one. A recent observation of a conjunction between types of events also produces a stronger disposition to associate those events than an earlier one. As the Hume of the Treatise went on to admit, these factors entail that the course of our ideas should not be in harmony with the past course of nature. Instead, it should be disproportionately influenced by the most recent observations (THU 1.3.13.1-2).

This is not all. Hume further observed that the strength of association is also affected by the ease with which it is made, so that a causal inference that needs to be drawn by appeal to a number of intermediate causes should be less strongly believed than one that is more immediate (THU 1.3.13.3). And just as there are factors that lead us to overlook or discount connections found in the past course of nature, so there are factors that lead us to suppose the existence of

connections that were not there. According to the theory, we are disposed to consider similar objects to have similar causes or effects. But any given object is a compound of many different characteristics, only one of which may be constantly conjoined with a cause or effect. Even if we have learned to distinguish the essential characteristic from the superfluous ones, when we encounter an object that resembles a cause or effect only in superfluous ways, the resemblance should lead us to conceive the associated effect or cause, and the ease of the association together with the vivacity of the encountered object should induce a kind of bigoted or prejudicial belief, which holds sway despite our recognition of the superfluity of the resemblance (THU 1.3.13.7 and 9).

Nor are these the only such cases. Hume noted that education ‘not only approaches in its influence, but even on many occasions prevails over that [belief] which arises from the constant and inseparable union of causes and effects’ (THU 1.3.9.17). He further noted that we do not regulate ourselves entirely by experience of the governing principles of human nature when deciding whether to believe testimony, but instead ‘have a remarkable propensity to believe whatever is reported, even concerning apparitions, enchantments, and prodigies, however contrary to daily experience and observation’ (THU 1.3.9.12). This is in part due to the influence of the resemblance relation between ideas (supposed to exist in the minds of others on the basis of their words) and facts, which strengthens the associative relation beyond what is warranted by experience of their constant conjunction. But it is also due to the fact that ideas that arouse passions are reciprocally enlivened by those passions (THU 1.3.10.4).

This looseness of fit between the course of our ideas and the past course of nature is not necessarily a bad feature of Hume’s ‘system.’ As a matter of fact, people’s beliefs are more strongly influenced by recent experiences; people are less inclined to lend credence to the conclusions of complex arguments; and people are disposed to bigotry, blind adherence to received opinions, and credulity. The fact that the course of our ideas fails to track the past course of nature in just these ways is further confirmation that Hume’s theory has correctly captured the psychological mechanisms responsible for human belief formation and is a further instance of its explanatory power in accounting for those inferences we are in fact psychologically compelled to draw.

But this is still not an entirely happy result. While many of us form blinkered, prejudicial, obstinate, and credulous beliefs, we do not all do so. At least, we do not all do so all of the time. At the very least, we do not all think we should do so, even if, as a matter of fact, we find ourselves irresistibly compelled to do so anyway. As Hume himself remarked, inferences skewed by recent experience are not ‘receiv’d by philosophy as solid and legitimate’ because ‘philosophers’ don’t think that the same event or the same conjunction between events should provide less evidence a month from now than it provides today (THU 1.3.13.1). Furthermore, education is not ‘recogniz’d by philosophers’ because it ‘is an artificial and not a natural cause,’ and because ‘its maxims are frequently contrary to reason, and even to themselves in different times and places’ (1.3.9.19). And credulity is, by Hume’s own profession, a universal and conspicuous ‘weakness of human nature’ (THU 1.3.9.12).

This raises two problems. If all beliefs are ultimately unjustifiable and all are founded on the same operation of a transmission of vivacity across associative links, how could any of us have come to think that some of them are better than others? And how could some of us (e.g., a gambler who places bets in accord with a calculation of the probability of outcomes, ignoring the results of recent games) not only think that certain beliefs are better than others but manage to form their own beliefs accordingly? Hume had solutions for both problems.

Epistemological Norms

In all cases we transfer our experience to instances, of which we have no experience, either expressly or tacitly, either directly or indirectly. [THU 1.3.8.14]

According to the account that has so far been presented of Hume's 'system,' causal inference is an unconscious ('tacit'), instinctive ('direct') operation resulting from, not carried out in cognizance of, past experience. On the first few occasions of observing objects of one sort to be followed by objects of another sort, we are unimpressed, and not disposed to draw any inference when encountering objects of either sort in the future. But as we make more and more observations of the conjunction of the two objects, we develop a habit to think of the one when presented with the other. As the number of observations increases, the habit strengthens, and as the habit strengthens, more and more of the mental dispositions characteristic of belief and attendant upon experience and memory come to attend the associated idea. Belief, therefore, is something that comes in degrees, varying from conjecture to certainty in proportion to the strength of the habit and hence to the number of past observations up to the point where a sufficient number of observations have been made to produce a habit that mimics experience in its effects (THU 1.3.12. 2). Importantly, we do not recall the past observations or appeal to them to justify our belief. The past observations have made us develop a habit and that habit alone produces the belief (THU 1.3.8.13).

But there are twists to this simple story. One twist arises from the fact that past experience is not always uniform.²⁷ Sometimes, objects of one sort are not always followed by objects of another sort. When that happens, the contrary experiences weaken the habit. Over time, we end up with a habit that would be strong or weak in proportion to the number of confirming instances in the total number of trials, but for the influence of the 'unphilosophical' factors mentioned above (THU 1.3.12.6).

The belief we get from inconstant experience is still 'tacit' and 'direct.' But in Treatise 1.3.12.2, Hume declared that there are other kinds of causal inference. The kind based on the gradual development of a habit over the course of a uniform past experience is not, he claimed, to be found in anyone 'who is arriv'd at the age of maturity' (THU 1.3.12.3), and the kind based

²⁷ When I speak here of a lack of uniformity in past experience, I mean a verified lack of uniformity, where careful scrutiny of the contiguous regions is unable to uncover any evidence of the existence of the inferred object, not an unverified lack of uniformity, where one fails to observe a cause or effect simply because one failed to look for it or (as in the case of historical inference) was in no position to observe it. Hume at one point grossly over-stated the extent of the lack of uniformity in our experience, pretending that the turning of the head or closing of the eyes could prevent us from considering a succession between two types of objects to be perfectly constant (THU 1.4.2.21). This is an artifact of a mistake lamented in a number of previous notes: Hume's persistent neglect of the point that, on his own theory, causes and effects are not merely conceived to exist, but to exist at a certain place at a certain time. If I am habituated to vividly imagine a cause or effect in one place, and I consider myself to have turned my head to look at another place or to have closed my eyes and not be looking at all, I am not going to suppose that I have experienced a failure of my expectations. As Hume himself pointed out elsewhere, when we reason from causes to effects or effects to causes, it is always the case that the object we reason to is unperceived. Where both cause and effect are present, the case is one of perception rather than causal inference (THU 1.3.2.2). The cases where one turns one's head or closes one's eyes are precisely the occasions on which causal inference is called for. Had Hume been right at Treatise 1.4.2.21, there would be no such thing as causal inference. There would only be perceptions of regularities in the succession of causes and effects and perceptions of the failure of those regularities to occur, without any attendant instinct to form a belief on the latter occasions. The 'system' rules that possibility out without any need to invoke the elaborate mechanism proposed at Treatise 1.4.2.24-43 to provide for belief in the continued existence of objects when not perceived.

on inconstant experience is one that ‘we have but few instances of in our probable reasonings’ (THU 1.3.12.7). Mature adults are supposed to draw causal inferences after just one experience, supposing it has been obtained in circumstances where ‘all foreign and superfluous circumstances’ have been removed. And Hume maintained that when the conjunction between causes and effects is not entirely uniform, we seldom rely on a gut reaction but instead deliberately recall the past experiments, count up the number of confirming and contrary instances, and form beliefs that are stronger or weaker in accord with a mathematical calculation of probabilities.²⁸ These are extraordinary claims that at first sight seem incompatible with the ‘system.’ A habit cannot be formed after just one experience, and a mathematical result is based on the perception of a relation between ideas that have no vivacity, and so should not produce belief.²⁹

Hume’s account of how we manage to do these things lays the foundations for epistemological norms and an account of action in accord with those norms.

General rules. Hume claimed that while we do not as a matter of fact recall any past experiences when drawing inferences concerning conjunctions of causes and effects that have been constantly observed since infancy (e.g., stones fall, fire burns, water suffocates), we do ‘assist the custom and transition of ideas’ by recalling past experiences when encountering more rare or unusual objects (THU 1.3.8.14). There is nothing about the system that would suggest we are prevented from doing so. On the contrary, similar objects can jog the memory as well as the imagination, particularly in unusual cases. And we can be motivated to recall past instances by passions such as curiosity, love of fame, fear, and hope. Our causal inferences could, therefore, be sometimes ‘express’ rather than ‘tacit.’

Just as nothing prevents us from expressly recalling and reviewing past experiences, so nothing prevents us from drawing conclusions from those past experiences ‘indirectly,’ by explicit appeal to causal rules, learned from past experience. The chief such rule is the general rule that like objects, placed in like circumstances, will have like effects (THU 1.3.15.6). This rule is not justified by past experience — no causal rule is. But past experience does lead us to form it and believe it. It is ‘merely habitual’ as Hume put it (THU 1.3.8.14). Once formed, it can be expressly appealed to in order to justify causal inference from as little as a single past experience (THU 1.3.8.14). This accounts for why people who have reached the age of maturity will draw causal inferences after just one experience rather than needing to be trained by a number of experiences.

‘Express and indirect’ causal inferences can be based on other rules besides the rule that similar objects placed in similar circumstances will have similar effects. As has already been noted, any striking resemblance between an unfamiliar object and a familiar one will lead us to

²⁸ These pronouncements seem inconsistent with THU 1.3.8.13-14, which declares that ‘in all the most establish’d and uniform conjunctions of causes and effects, such as those of gravity, impulse, solidity, &c. the mind never carries its view expressly to consider any past experience,’ illustrating the claim with the point that a traveler who runs into a river does not consult past experience when forming the belief that walking out on the water will be followed by sinking and suffocating. The two passages can be reconciled if Hume’s point in THU 1.3.12.3 and 1.3.12.7 is taken to concern just those causal inferences involving new, rare, and unusual objects and the formation of new causal laws. Our everyday inferences concerning familiar objects can be considered to proceed in accord with habits learned in infancy.

²⁹ For Hume, mathematical results are matters of knowledge, not belief, where the knowledge arises from not being able to conceive things in any other way (THU 1.3.11.2, cf. 1.3.7.3). One can have knowledge without belief because belief involves attention, elevation of passion, and inclination to action, and merely appreciating the impossibility of conceiving things any other way need have none of those results.

suppose that the unfamiliar object has the same causes or effects as the familiar one, even if there are some dissimilarities between the objects and the attendant circumstances are not quite the same. This is the foundation of prejudice. As we grow older, we encounter cases in which our prejudices are disconfirmed and reflection on these cases leads us to appreciate the importance of distinguishing between superficial characteristics, which are often but not always present in causal conjunctions, and essential ones, which are always present (THU 1.3.13.11-12). We begin to think that it is not good enough to suppose that any object that bears any striking resemblance to objects we have experienced before will have the same causes or effects. Instead, we need to be sure that we have eliminated ‘all foreign and superfluous circumstances’ as Hume put it (THU 1.3.8.14). We first consider it to be at least possible that where two resembling objects have different effects, all the similarities between them must be foreign and superfluous and the different effects must arise from some hidden respect in which the causes differ. As it turns out, our experience of regularly finding these hidden features upon a more exact scrutiny habituates us to that belief (THU 1.3.12.5). A similar course of experience habituates us to the belief that where strikingly different objects have the same effect, all the differences between them are foreign and superfluous and the effect must arise from some circumstance common to the two. We are further habituated to believe that any increase or diminution in the effect must be due to a compound cause, and that any cause that persists over time before being followed by its effect cannot be the sole cause of that effect (T 1.3.13.11-12; 1.3.15.7-10). These ‘rules by which to judge of causes and effects’ justify other causal inferences. Taken together, they constitute a logic of causal inference (THU 1.3.15.11) — a system of rules that can be expressly appealed to in drawing indirect or ‘oblique’ causal inferences.

This is one part of the answer to the question of how Hume could provide for a logic of causal inference.³⁰ Once we have come to form and accept the rules, inferences that are in accord with them will be approved of as wise or justified, whereas those that violate them will be condemned as foolish. This will be the case even if the person making the normative assessment is personally unable to follow the rules due to the influence of ‘unphilosophical’ factors.

Probabilities. Hume noted that while past experience may have habituated us to the thought that same objects have same effects, we do not always find this to be the case. Contrary experience does not, however, lead us to diminish our confidence in the general rule because we have been further habituated to believe that where same objects have different effects they will be found upon more exact scrutiny to differ in some previously unnoticed way. We may not always have the opportunity, the curiosity, the leisure, or the resources to search for this hidden circumstance. But this just means that, in the absence of a perception of a previously hidden cause, our habits will lead us to believe that it must exist. The case here is similar to what Hume ought to have said concerning the spatial contiguity of causes and effects. If we fail to observe a succession of cause and effect because closing our eyes or turning our heads leads us to fail to observe the contiguous regions, then we do not think we have observed a failure of the expected succession to occur. On the contrary, this is exactly the sort of case in which the habit kicks in and leads us to form a belief in the unperceived existence of the cause or effect at the contiguous location. The only difference between the two cases is that this time Hume did not fumble, as he

³⁰ For earlier versions of the account given here see Wilson, F. Hume’s Defence of Causal Inference (Toronto: University of Toronto Press, 1997), ch. 2, esp. pp. 123-140 and Morris, W. E. ‘Belief, Probability, Normativity,’ in Saul Traiger, (ed), The Blackwell Guide to Hume’s Treatise (Malden: Blackwell, 2006), pp. 77-94, esp. pp. 85-91.

did at Treatise 1.4.2.21, but declared that, ‘From the observation of several parallel instances, philosophers form a maxim, that the connexion betwixt all causes and effects is equally necessary, and that its seeming uncertainty in some instances proceeds from the secret opposition of contrary causes’ (THU 1.3.12.5).

But, Hume went on to observe, even though we may believe there is a hidden cause, in the absence of opportunities, curiosity, leisure, or resources to search for it, we have no recourse but to consider those circumstances that tend to accompany it to be signs of its likely existence, and so to take apparently similar objects to have similar effects, albeit with a diminished degree of certainty proportioned to our experience of the degree of regularity in the connection between occurrences of the superfluous circumstances and the effect (1.3.12.6). These inferences are ‘probable’ in the strict sense of being something less than ‘entirely free of doubt and uncertainty’ (THU 1.3.11.2). Importantly, they are not ‘tacit and direct.’ They do not result from a habit that has been strengthened or weakened by past experience — but also by a host of ‘unphilosophical’ factors. They are instead ‘oblique’ or explicit and indirect. They result from a survey of past instances and a calculation of the proportion of confirming experiments in the total number of trials.

It has already been noted why we might be impelled to remember past experiences and want to survey them. Hume’s remaining challenge in accounting for our ‘explicit and indirect’ reasoning concerning matters of strict probability was not to come up with a mathematical theory of the calculation of probability. It was to explain how we come to proportion belief in accord with any merely mathematical calculation.

The basic facts that need to be accounted for are obvious: in cases where there has never been an exception to a succession, we should form a belief that is ‘entirely free of doubt and uncertainty’; in cases where it is no more likely that an event will occur than not, we should have no belief, and in the intermediate cases we should have a proportionally strong or weak belief. So, where there is what we might call a ‘fifty-fifty chance,’ we should have no belief; where there is a ‘one hundred per cent chance’ we should have certain belief; and where there is a ‘seventy-five percent chance’ we should have a belief that is half way between indifference and certainty. In the last case, importantly, we do not form a certain belief in the proposition that the event has a probability of fifty (or seventy-five) percent;³¹ we form a less vivacious conception of the event — one that is half way between a certain belief and an indifferently entertained idea as measured by the feeling that attends it and the strength of the characteristic mental dispositions. We should get a belief of this strength regardless of what our views are on how to calculate probabilities mathematically, or whether we employ any mathematics at all beyond a bare survey of instances.

In explaining how the belief arises Hume distinguished between two cases, that of belief in ‘chances,’ and that of belief in ‘inconstant causes.’ Chance arises when a cause has an effect that can indifferently take one or another of a finite number of alternative forms, e.g. the toss of a die causes it to fall with one or other of its six sides facing up. Causes are ‘inconstant’ when either the indifference condition or the finitude condition is not met.

In the first case we have been strongly habituated to associate the generic effect with the cause. So, for example, upon witnessing a die being tossed we form a strong belief that it will fall with one side facing up. But now suppose we ask ourselves exactly which side will face up. Because the generic effect has a number of equally possible, mutually incompatible forms the strong belief in the generic effect gets divided, with an equal portion going to each alternative.

³¹ Hume denied this at 1.3.11.8.

But because the alternatives are all mutually incompatible the divided beliefs cancel one another out. We are left with a very strong belief that the generic effect will occur, but indifferent over which form it will take. E.g., the belief that the die will fall with ‘side one’ facing up would be one sixth the strength of the belief that it will fall with some side or other facing up — but for the fact that we can’t have any degree of belief that ‘side one’ will face up without disbelieving that any of the other sides will face up. Since, however, all those possibilities are considered to be equally likely, they cancel one another out, leaving us with certainty that some side or other will face up, but indifference about which one.

Hume’s account of how we form beliefs about the effects of inconstant causes grows out of a refinement of the account of belief in chances. If some of the chance alternatives resemble one another, e.g., four of the six sides have the same figure on them, a survey of the alternatives causes their portions of the original belief to combine. In that case the alternatives do not perfectly cancel one another out, e.g., the possibility that the die will land with the more familiar figure facing up receives four of the six portions, only two of which suffice to cancel the rival possibilities, leaving us with a residual belief that the more familiar figure will face up. This residual belief is two sixths of the way between indifference and conviction.³²

Belief in the outcome of inconstant causes is like this, except that in this case we do not start off with a strong belief in the occurrence of a generic effect. Hume instead supposed that we develop the habit of expecting the future to be like the past. The strong belief in this uniformity principle plays the same role as the strong belief in the occurrence of a generic effect. If in the past one egg in every crate has been rotten, we will transfer that past experience to the future in the sense that any subsequent impression or memory of an egg crate will produce a strong belief in the existence of eleven sound eggs and one rotten one. On picking out any one egg from the crate and forming an idea of what we will smell upon cracking it open, that strong belief is divided into twelve packets, eleven of which resemble one another in being attached to ideas of sound eggs, and one of which is attached to the idea of a rotten egg. Since the possibilities are incompatible, we cannot believe them both to result from cracking the egg. Since one of them comes up so much more often in a mental survey of alternatives, we cannot be perfectly indifferent, either. The odd possibility is cancelled out by one of the opposing packets leaving us with a belief that this egg will prove to be sound that is 10/12 as strong as the original belief that there will be eleven sound eggs in the crate.

There are oddities about Hume’s presentation of this account in both the Treatise and the Enquiry. The account of the Treatise is repeated four times over (first at THU 1.3.12.8-12, a second time over 13-18, again in 19, and a fourth time over 20-22). Whether this is because Hume was unsure of himself or particularly proud of his result is unclear. In Enquiry 6 he retreated from the attempt to provide a calculus of the strength of belief, at first attributing probabilistic belief to ‘an inexplicable contrivance of nature’ but then saying that his account of belief as a firmer and stronger conception of an object allows us to explain matters a bit further by saying that where ‘a great number of views ... concur in one event’ they ‘fortify’ the conception of that event in the imagination and so produce belief. This reticence notwithstanding, the full theory of belief as proportioned in accord with the subtraction of less frequent possibilities from more frequent ones reappears in Enquiry 10.4.

³² If we calculate probabilities in the common way, this one-third belief would correspond to a two thirds probability. The point to keep in mind is that Hume was not concerned to account for the mathematical probability of an outcome, but for the strength of belief in that outcome.

Whatever ambivalence Hume might or might not have had about his account, he suggested in the Treatise (1.3.11.7-8) and stated outright in the Abstract (4) that he had offered the only adequate explanation of probable belief that had ever been given. There could be no demonstrative account of probable belief because it is in principle impossible to demonstrate that the event that is most often observed will occur (in that case, it would not be merely probable). There can be no probable account of probable belief because those who claim that a survey of past results can at least make us certain about which event is most likely to occur are actually doing no more than uttering the trivial claim that the event that has come up most often in a survey of past results is the event that has come up most often in a past survey of results, not giving us a reason to believe, with any degree of conviction, that this event will occur on any future occasion.³³ This is further proof, in Hume's eyes, that belief must be a more vivacious manner of conception rather than the product of a judgment.

'Philosophical' Belief

By all that has been said the reader will easily perceive, that the philosophy contained in this book is very sceptical, and tends to give us a notion of the imperfections and narrow limits of human understanding. [AB 27]

Hume had no sooner presented his account of how we arrive at weaker or stronger beliefs about matters of probability than he remarked that recent experiments weigh more than earlier ones in our assessments of the probability of outcomes, whether we realize it or not. The freshness of an experiment 'has a considerable influence on the understanding, and secretly changes the authority of the same argument, according to the times, in which it is propos'd to us.' He also said that this is an effect that 'has not had the good fortune' to be 'receiv'd by philosophers, and allow'd to be [a] reasonable foundation of belief and opinion.' As already noted, this is just one of many 'unphilosophical' influences on belief, influences that we are as a matter of fact susceptible to, for reasons that Hume's 'system' succeeds admirably well at explaining.

We might conjecture that 'philosophers' are led to condemn these influences as a consequence of having been habituated to accept certain rules, such as the rule that explicit and indirect probable inferences are more often correct than tacit and indirect ones. But not everyone is habituated to accept the same rules. Hume noted that 'the vulgar' are not habituated to accept that same causes must have same effects or that when a cause fails of its usual effect a more exact scrutiny will uncover some previously hidden circumstance that is the true cause. Instead, their experiences have habituated them to accept that causes are not perfectly regular in their operations, even though nothing impedes them (1.3.12.5). Someone with that outlook will be less inclined to recognize a distinction between superfluous and essential components of causes (hence more inclined to prejudice), and less inclined to accept that the course of nature cannot change (hence more inclined to form their beliefs on the basis of recent evidence). And a philosopher is in no position to convince them of the error of their ways since the philosopher's commitments have no other foundation than (at best, and not always) the past course of their own experience — a foundation that the vulgar can appeal to as well. The difference between the vulgar and the philosophers is that they have had different experiences. Each judges in

³³ For further commentary on this argument see Howson, C. Hume's Problem (Oxford: Clarendon Press, 2000), p. 14 and ch. 4.

accord with what their own experiences have made them and neither is in a position to appeal to their experiences as a higher authority.

Nor is this the only impediment to ‘philosophical’ belief. Just because ‘philosophers’ approve of the ‘rules by which to judge of causes and effects,’ it does not follow that they will always form their beliefs in accord with those rules. Very few of us have been habituated to think i) that whenever a supposed cause fails of its usual effect a hidden cause will be discovered upon more exact scrutiny, ii) that the bare passage of time does not destroy the authority of an experiment, or iii) that beliefs that are based on recent, lurid, anecdotes will more often prove to be false than those that are based on impartial survey of cases. The reason most of us accept these and other such rules is not personal experience in the laboratory, but uncritical acceptance of the testimony of others, education, or the influence of a few, recent, notable errors. That is perhaps not a bad thing. Ironically, if anything enables ‘philosophers’ to draw their inferences just in accord with the rules by which to judge of causes and effects, it is not having been habituated to accept them but having been educated to accept them.³⁴ Education is among the most illegitimate but also the most powerful of the factors influencing our belief. Personal past experience conveys a degree of vivacity to associated ideas that is vulnerable to being artificially enhanced or diminished by resemblance, contiguity, passion, or the passage of time, whereas education is largely impervious to those influences.

Hume’s position is not entirely sceptical. Though he never said so in quite so many words (but see THU 1.4.7.13), he would probably have agreed that a survey would show that ‘philosophical’ beliefs have more often turned out to be correct than ‘vulgar’ ones. The rules followed by ‘philosophers’ in arriving at their beliefs therefore have a title to be considered the logic of probable reasoning rather than just an anthropological description of the epistemological aspirations of a certain social class.³⁵ But the rules have this title only for those already habituated to accept that the future will be like the past, and to accept that explicit and indirect probable inferences, based on an impartial survey of past cases, are to be preferred to tacit and indirect ones. Those not habituated (or educated) to accept these rules could justly reject any appeal to a survey of past instances as question-begging. And even those who do accept the presuppositions of the argument will not always be able to resist the other factors inducing them to form beliefs. ‘Unphilosophical’ belief will persist, even among those who know better.

This explains the characteristic pessimism displayed in Hume’s Essays, Natural History of Religion, and History of England.³⁶ Under certain social conditions the arts and sciences will flourish and philosophical learning will triumph over vulgar superstition. But once entrenched in a society, there is no guarantee that the arts and sciences will progress. A change in circumstances, beyond anyone’s ability to control or even predict, altering the course of people’s experiences, can change their inferential practices and the intellectual culture that had developed can be supplanted by the crudest barbarism.

Hume did think that there is one means by which the influence of ‘unphilosophical’ factors on belief might be mitigated: an experience of the force of sceptical arguments.³⁷ He thought that someone who has once been convinced of the weakness and fallibility of our powers of

³⁴ For another ironic twist, see THU 1.3.13.12.

³⁵ In this I follow Beebee, Hume on Causation, 71-74.

³⁶ For notable instances see E 135-37; E 528-29; H 5.67; and NHR as a whole.

³⁷ For more on this, see Norton, D. F. ‘How a sceptic may live scepticism,’ in MacIntosh, J. J. and Meynell, H. A. (eds), Faith, Scepticism, and Personal Identity (Calgary: The University of Calgary Press, 1994), pp. 119-139, esp. pp. 128-132.

knowledge will be permanently changed by that experience. Forever afterwards, they will be doubtful about all their beliefs and hesitant about forming them. This doubt and hesitancy will naturally dispose them to distrust testimony and education and refrain from peremptory (tacit, direct) judgment (EHU 5.1 and 12.24-26; DNR 1.133-34). It will also extend to philosophical beliefs, as Hume made clear in the last words of Treatise 1.4.7.

... we are apt not only to forget our scepticism, but even our modesty too; and make use of such terms as these, 'tis evident, 'tis certain, 'tis undeniable; which a due deference to the public ought, perhaps, to prevent. ... such expressions were extorted from me ..., and imply no dogmatical spirit, nor conceited idea of my own judgment, which are sentiments that I am sensible can become no body, and a sceptic still less than any other.

But a sceptical disposition will at least put philosophical beliefs on an equal footing with 'unphilosophical' ones, where they have a greater chance of winning assent after due consideration.

Seen in this light, Hume's account of the 'unphilosophical' influences we are subjected to and of the ultimate lack of any foundation even for 'philosophical' belief constitutes the best sceptical lesson, and thereby the best lesson in logic, that anyone could have. In the Treatise Hume overplayed this result. Realizing the salutary effects that a sceptical disposition could have, he set out to blast his readers with the most extreme — but also the most strained — sceptical arguments he could invent. Not content to raise sceptical doubts about causal inference in Treatise 1.3, Hume went on to raise sceptical arguments against the existence of an external world, against the existence of persisting substances, and even against the validity of demonstration and the existence of a self. It is as if he thought that his reader needed to first be driven into a deep sceptical crisis in order to be adequately prepared to undertake a properly scientific study of the foundations of morals in the passions, as taken up in Treatise 2 and 3.³⁸ But he seems to have quickly realized that the excessive sceptical arguments had the opposite effect. By contesting received opinions too forcefully, he had only led readers to reject the Treatise as a whole. The Enquiry takes a different tack. Though it mentions reasons for scepticism both about the existence of an external world and about the validity of probable reasoning, it also discounts them both, presenting them merely as a means to inducing a properly scientific attitude. Hume seems to have realized that there is no better sceptical argument than the presentation of the 'system' with its consequences. The 'system,' which diagnoses the problem, also cures it by means of that very diagnosis.

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³⁸ This idea has been pursued in more detail by Loeb, pp. 6, 36, 215-229. However, Loeb is inclined to attribute Hume's overstated scepticism to a 'somewhat perverse' (16) aspect of his 'temperament' (229) rather than an attempt to cause the reader to become more reflective and hesitant about all their beliefs.

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