Enquiry Concerning Human Understanding

David Hume

Section 4: Sceptical doubts about the operations of the understanding

All the objects of human reason or enquiry fall naturally into two kinds, namely *relations of ideas* and *matters of fact*. The first kind include geometry, algebra, and arithmetic, and indeed every statement that is either intuitively or demonstratively certain. *That the square of the hypotenuse is equal to the squares of the other two sides* expresses a relation between those figures. That *three times five equals half of thirty* expresses a relation between those numbers. Propositions of this kind can be discovered purely by thinking, with no need to attend to anything that actually exists anywhere in the universe. The truths that Euclid demonstrated would still be certain and self-evident even if there never were a circle or triangle in nature.

Matters of fact, which are the second objects of human reason, are not established in the same way; and we cannot have such strong grounds for thinking them true. The contrary of every matter of fact is still *possible*, because it doesn't imply a contradiction and is conceived by the mind as easily and clearly as if it conformed perfectly to reality. *That the sun will not rise tomorrow* is just as intelligible as—and no more contradictory than—the proposition that the sun will rise tomorrow. It would therefore be a waste of time to try to *demonstrate* [= 'prove absolutely rigorously'] its falsehood. If it were demonstratively false, it would imply a contradiction and so could never be clearly conceived by the mind.

So it may be worth our time and trouble to try to answer this: What sorts of grounds do we have for being sure of matters of fact—propositions about what exists and what is the case—that aren't attested by our present senses or the records of our memory? It's a notable fact that neither ancient philosophers nor modern ones have attended much to this important question; so in investigating it I shall be marching through difficult terrain with no guides or signposts; and that may help to excuse any errors I commit or doubts that I raise. Those errors and doubts may even be useful: they may make people curious and eager to learn, and may destroy that ungrounded and unexamined *confidence* ·that people have in their opinions—a confidence· that is the curse of all reasoning and free enquiry. If we find things wrong with commonly accepted philosophical views, that needn't discourage us, but rather can spur us on to try for something fuller and more satisfactory than has yet been published.

All reasonings about matters of fact seem to be based on the relation of *cause and effect*, which is the only relation that can take us beyond the evidence of our memory and senses. If you ask someone why he believes some matter of fact which isn't now present to him—for instance that his friend is now in France—he will give you a reason; and this reason will be some other fact, such as that he has received a letter from his friend or that his friend had planned to go to France. Someone who finds a watch or other machine on a desert island will conclude that there have been men on that island. All our reasonings concerning fact are like this. When we reason in this way, we suppose that the present fact is *connected* with the one that we infer from it. If there were nothing to bind the two facts together, the inference of one from the other would be utterly shaky. Hearing the sounds of someone talking rationally in the dark assures us of the presence of some person. Why? Because such sounds are the effects of the human constitution, and are closely connected with it. All our other reasonings of this sort, when examined in detail, turn out to be based on the relation of cause and effect. The causal chain from the evidence to the 'matter of fact' conclusion may be short or long. And it may be that the causal

connection between them isn't direct but collateral—as when one sees light and infers heat, not because either causes the other but because the two are collateral effects of a single cause, namely fire.

So if we want to understand the basis of our confidence about matters of fact, we must find out how we come to know about cause and effect.

I venture to assert, as true without exception, that knowledge about causes is never acquired through *a priori* reasoning, and always comes from our experience of finding that particular objects are constantly associated with one other. [When Hume is discussing cause and effect, his word 'object' often covers events as well as things.] Present an object to a man whose skill and intelligence are as great as you like; if the object is of a kind that is entirely new to him, no amount of studying of its perceptible qualities will enable him to discover any of its causes or effects. Adam, even if his reasoning abilities were perfect from the start, couldn't have inferred from the fluidity and transparency of water that it could drown him, or from the light and warmth of fire that it could burn him. The qualities of an object that appear to the senses never reveal the causes that produced the object or the effects that it will have; nor can our reason, unaided by experience, ever draw any conclusion about real existence and matters of fact.

The proposition that *causes and effects are discoverable not by reason but by experience* will be freely granted **(1)** with regard to objects that we remember having once been altogether unknown to us; for in those cases we remember the time when we were quite unable to tell what would arise from those objects. Present two smooth pieces of marble to a man who has no knowledge of physics—he will not be able to work out that they will stick together in such a way that it takes great force to separate them by pulling them directly away from one another, while it will be easy to slide them apart. **(2)** Events that aren't much like the common course of nature are also readily agreed to be known only by experience; and nobody thinks that the explosion of gunpowder, or the attraction of a magnet, could ever be discovered by arguments *a priori*—·i.e. by simply *thinking* about gunpowder and magnets, without

bringing in anything known from experience·. **(3)** Similarly, when an effect is thought to depend on an intricate machinery or secret structure of parts, we don't hesitate to attribute all our knowledge of it to experience. No-one would assert that he can give the ultimate reason why milk or bread is nourishing for a man but not for a lion or a tiger.

But this same proposition—·that causes and effects cannot be discovered by reason·—may seem less obvious when it is applied to events of kinds **(1)** that we have been familiar with all our lives, **(2)** that are very like the whole course of nature, and **(3)** that are supposed to depend on the simple ·perceptible· qualities of objects and not on any secret structure of parts. We are apt to imagine that we could discover *these* effects purely through reason, without experience. We fancy that if we had been suddenly brought into this world, we could have known straight off that when one billiard ball strikes another it will make it move—knowing this for certain, without having to try it out on billiard balls. Custom has such a great influence! At its strongest it not only hides our natural ignorance but even conceals *itself* : just because custom is so strongly at work, we aren't aware of its being at work at all.

If you're not yet convinced that absolutely all the laws of nature and operations of bodies can be known only by experience, consider the following. If we are asked to say what the effects will be of some object, without consulting past experience of it, how can the mind go about doing this? It must invent or imagine some event as being the object's effect; and clearly this invention must be entirely arbitrary. The mind can't possibly find the effect *in* the supposed cause, however carefully we examine it, for the effect is totally different from the cause and therefore can never be discovered *in* it. Motion in the second billiard ball is a distinct event from motion in the first, and nothing in the first ball's motion even hints at motion in the second. A stone raised into the air and left without any support immediately falls; but if we consider this situation *a priori* we shall find nothing that generates the idea of a downward rather than an upward or some other motion in the stone.

Just as the first imagining or inventing of a particular effect is arbitrary if it isn't based on experience, the same holds for the supposed tie or connection between cause and effect—the tie that binds them together and makes it impossible for that cause to have any effect but that one. Suppose for example that I see one billiard ball moving in a straight line towards another: even if the contact between them should *happen* to suggest to me the idea of motion in the second ball, aren't there a hundred different events that I can conceive might follow from that cause? May not both balls remain still? May not the first bounce straight back the way it came, or bounce off in some other direction? All these suppositions are consistent and conceivable. Why then should we prefer just one, which is no more consistent or conceivable than the rest? Our *a priori* reasonings will never reveal any basis for this preference.

In short, every effect is a distinct event from its cause. So it can't be discovered in the cause, and the first invention or conception of it *a priori* must be wholly arbitrary. Also, even after it has been suggested, the linking of it with the cause must still appear as arbitrary, because plenty of other possible effects must seem just as consistent and natural from reason's point of view. So there isn't the slightest hope of reaching any conclusions about causes and effects without the help of experience. …

Although geometry is rightly famous for the accuracy of its reasoning, when it is brought to the aid of physics it can't lead us to knowledge of ultimate causes, thereby curing the ignorance I have been discussing. Every part of applied mathematics works on the assumption that nature operates according to certain established laws; and abstract reasonings are used either to help experience to discover these laws or to work out how the laws apply in particular cases where exactness of measurement is relevant. Here is an example. It is a law of motion, discovered by experience, that *the force of any moving body is proportional to its mass and to its velocity*; so we can get a small force to overcome the greatest obstacle if we can devise a machine that will increase the velocity of the force so that it overwhelms its antagonist. Geometry helps us to apply

this law by showing us how to work out the sizes and shapes of all the parts of the machine that we make for this purpose; but the law itself is something we know purely from experience, and no amount of abstract reasoning could lead us one step towards the knowledge of it. When we reason *a priori*, considering some object or cause merely as it appears to the mind and independently of any observation of its behaviour, it could never prompt us to think of any *other* item, such as its effect. Much less could it show us the unbreakable connection between them. It would take a very *clever* person to discover by reasoning that heat makes crystals and cold makes ice without having had experience of the effects of heat and cold!

Part 2

But we haven't yet found an acceptable answer to the question that I initially asked. Each solution raises new questions that are as hard to answer as the first one was, and that lead us on to further enquiries. To the question *What is the nature of all our reasonings concerning matter of fact?* the proper answer seems to be that they are based on the relation of cause and effect. When it is further asked, *What is the foundation of all our reasonings about cause and effect?* we can answer in one word, *experience*. But if we persist with questions, and ask, *What are inferences from experience based on?* this raises a new question that may be harder still. Philosophers—for all their air of superior wisdom—are given a hard time by people who persist with questions, pushing them from every corner into which they retreat, finally bringing them to some dangerous dilemma [= 'a choice between two alternatives that both seem wrong']. The best way for us to avoid such an embarrassment is not to claim too much in the first place, and even to find the difficulty for ourselves before it is brought against us as an objection. In this way we can make a kind of merit even of our ignorance!

In this section I shall settle for something easy, offering only a •negative answer to the question I have raised ·about what inferences from experience are based on·. It is this: even after we have experience of the

operations of cause and effect, *the conclusions we draw from that experience are •not based on reasoning or on any process of the understanding*. I shall try to explain and defend this answer.

It must be granted that nature has kept us at a distance from all its secrets, and has allowed us to know only a few superficial qualities of objects, concealing from us the powers and energies on which the influence of the objects entirely depends. Our senses tell us about the colour, weight and consistency of bread; but neither the senses nor reason can ever tell us about the qualities that enable bread to nourish a human body. Sight or touch gives us an idea of the *motion* of bodies; but as for the amazing *force* that keeps a body moving for ever unless it collides with other bodies—we cannot have the remotest conception of that. Despite this ignorance of natural powers and forces, however, we always assume that the same sensible qualities [= 'qualities that can be seen or felt or heard etc.'] will have the same secret powers, and we expect them to have the same effects that we have found them to have in our past experience. If we are given some stuff with the colour and consistency of bread that we have eaten in the past, we don't hesitate to repeat the experiment ·of eating it·, confidently expecting it to nourish and support us. ·That's what we do every morning at the breakfast table: confidently *experimenting* with bread-like stuff by eating it!· I would like to know what the basis is for this process of thought. Everyone agrees that a thing's sensible qualities aren't connected with its secret powers in any way that we know about, so that the mind isn't led to a conclusion about their constant and regular conjunction through anything it knows of their nature. All that past experience can tell us, directly and for sure, concerns the behaviour of the particular objects we observed, at the particular time when we observed them. ·My experience directly and certainly informs me that *that* fire consumed coal *then*; but it's silent about the behaviour of the same fire a few minutes later, and about other fires at any time·. Why should this experience be extended to future times and to other objects, which for all we know may only *seem* similar?—that's what I want to know. The bread that I formerly ate nourished me; i.e. a body

with such and such sensible qualities did at that time have such and such secret powers. But does it follow that other bread must also nourish me at other times, and that the same perceptible qualities must always be accompanied by the same secret powers? It doesn't seem to follow necessarily. Anyway, it must be admitted that in such a case as this the mind draws a conclusion; it takes a certain step, goes through a process of thought or inference, which needs to be explained. These two propositions are far from being the same:

- •I have found that such and such an object has always had such and such an effect.
- •I foresee that other objects which appear similar will have similar effects.

The second proposition is always inferred from the first; and if you like I'll grant that it is rightly inferred. But if you insist that the inference is made by a chain of reasoning, I challenge you to produce the reasoning. The connection between these propositions is not intuitive [i.e. the second doesn't self-evidently and immediately follow from the first]. If the inference is to be conducted through reason alone, it must be with help from some intermediate step. But when I try to think what that intermediate step might be, I am defeated. Those who assert that it really exists and is the origin of all our conclusions about matters of fact owe us an account of what it is.

·They haven't given any account of this, which I take to be evidence that none can be given·. If many penetrating and able philosophers try and fail to discover a connecting proposition or intermediate step through which the understanding can perform this inference from past effects to future ones, my negative line of thought about this will eventually be found entirely convincing. But as the question is still new, the reader may not trust his own abilities enough to conclude that because he can't find a certain argument it doesn't exist. In that case I need to tackle a harder task than I have so far undertaken—namely, going through all the branches of human knowledge one by one, trying to show that none can give us such an argument.

All reasonings fall into two kinds: **(1)** demonstrative reasoning, or that concerning relations of ideas, and **(2)** factual reasoning, or that concerning matters of fact and existence. That no **(1)** demonstrative arguments are involved in the inference from past to future seems evident; since there is no outright contradiction in supposing that the course of nature will change so that an object that seems like ones we have experienced will have different or contrary effects from theirs. Can't I clearly and distinctly conceive that snowy stuff falling from the clouds might taste salty or feel hot? Is there anything unintelligible about supposing that all the trees will flourish in December and lose their leaves in June? Now, if something is intelligible and can be distinctly conceived, it implies no contradiction and can never be proved false by any demonstrative argument or abstract *a priori* reasoning.

So if there are arguments to justify us in trusting past experience and making it the standard of our future judgment, these arguments can only be *probable*; i.e. they must be of the kind **(2)** that concern matters of fact and real existence, to put it in terms of the classification I have given. But probable reasoning, if I have described it accurately, can't provide us with the argument we are looking for. According to my account, all arguments about existence are based on the relation of cause and effect; our knowledge of that relation is derived entirely from experience; and in drawing conclusions from experience we assume that the future will be like the past. So if we try to prove *this* assumption by probable arguments, i.e. arguments regarding existence, we shall obviously be going in a circle, taking for granted the very point that is in question.

In reality, all arguments from experience are based on the similarities that we find among natural objects—which lead us to expect that the effects of the objects will also be similar. Although only a fool or a madman would ever challenge the authority of experience or reject it as a guide to human life, still perhaps a philosopher may be allowed to ask what it is about human nature that gives this mighty authority to experience and leads us to profit from the similarities that nature has established among different objects. Our inferences from experience all

boil down to this: *From causes that appear similar we expect similar effects*. If this were based on reason, we could draw the conclusion as well after •a single instance as after •a long course of experience. But that isn't in fact how things stand. Nothing so similar as eggs; yet no-one expects them all to taste the same! When we become sure of what will result from a particular event, it is only because we have experienced many events of that kind, all with the same effects. Now, where is that process of reasoning that infers from one instance a conclusion that was not inferred from a hundred previous instances just like this single one? I ask this •for the sake of information as much as •with the intention of raising difficulties. I can't find—I can't *imagine*—any such reasoning. But I am willing to learn, if anyone can teach me.

It may be said that from a number of uniform experiences we *infer a connection* between the sensible qualities and the secret powers; but this seems to raise the same difficulty in different words. We still have to ask what process of argument *this* inference is based on. Where is the intermediate step, the interposing ideas, which join propositions that are so different from one another? It is agreed that the colour, consistency and other sensible qualities of bread don't appear to be inherently connected with the secret powers of nourishment and life-support. If they were, we could infer these secret powers from a first encounter with those qualities, without the aid of long previous experience; and this contradicts what all philosophers believe and contradicts plain matters of fact. Start by thinking of us in our natural state of ignorance, in which we know nothing about the powers and influence of anything. How does experience cure this ignorance? All it does is to show us that certain ·similar· objects had similar effects; it teaches us that those particular objects had such and such powers and forces at those particular times. When a new object with similar perceptible qualities is produced, we expect similar powers and forces and look for a similar effect. We expect for instance that stuff with the colour and consistency of bread will nourish us. But this surely is a movement of the mind that needs to be explained. When a man says

> ‘I have found in all •past instances such and such sensible qualities conjoined with such and such secret powers’,

and then goes on to say

> ‘Similar sensible qualities •will always be combined with similar secret powers’,

he isn’t guilty of merely repeating himself; these propositions are in no way the same. ‘The second proposition is inferred from the first’, you may say; but you must admit that the inference isn’t intuitive [= ‘can’t be seen at a glance to be valid’], and it isn’t demonstrative either [= ‘can’t be carried through by a series of steps each of which can be seen at a glance to be valid’]. What kind of inference is it, then? To call it ‘experiential’ is to assume the point that is in question. For all inferences from experience are based on the assumption that the future will resemble the past, and that similar powers will be combined with similar sensible qualities. As soon as the suspicion is planted that the course of nature may change, so that the past stops being a guide to the future, all experience becomes useless and can’t support any inference or conclusion. So no arguments from experience can *support* this resemblance of the past to the future, because all such arguments are *based on* the assumption of that resemblance. However regular the course of things has been, that fact on its own doesn’t prove that the future will also be regular. It’s no use your claiming to have learned the nature of bodies from your past experience. Their secret nature, and consequently all their effects and influence, may change without any change in their sensible qualities. This happens •sometimes with regard to •some objects: Why couldn’t it happen •always with regard to •all? What logic, what process of argument, secures you against this? You may say that I don’t *behave* as though I had doubts about this; but that would reflect a misunderstanding of why I am raising these questions. When I’m considering how to act, I am quite satisfied that the future will be like the past; but as a philosopher with an *enquiring*—I won’t say *sceptical*—turn of mind, I want to know what this confidence is based on. Nothing I have read, no research I have done, has yet been able to remove my

difficulty. Can I do better than to put the difficulty before the public, even though I may not have much hope of being given a solution? In this way we shall at least be aware of our ignorance, even if we don’t increase our knowledge.

It would be inexcusably arrogant to conclude that because I haven’t discovered a certain argument it doesn’t really exist. Even if learned men down the centuries have searched for something without finding it, perhaps it would still be rash to conclude with confidence that the subject must surpass human understanding. Even though we examine all the sources of our knowledge and conclude that they are unfit for a given subject, we may still suspect that the list of sources is not complete or our examination of them not accurate. With regard to our present subject, however, there are reasons to think that my conclusion is certainly right and that I am not arrogant in thinking so.

It is certain that the most ignorant and stupid peasants, even infants, indeed even brute beasts, improve by experience and learn the qualities of natural objects by observing their effects. When a child has felt pain from touching the flame of a candle, he will be careful not to put his hand near any candle, and will expect a similar effect from any cause that is similar in its appearance. If you assert that the child’s understanding comes to this conclusion through a process of argument, it is fair for me to demand that you produce that argument, and you have no excuse for refusing to do so. You can’t say that the argument has eluded you because it is so difficult and complex, because you have just said that a mere infant finds it easy! So if you hesitate for a moment, or if after reflection you produce any intricate or profound argument, you have in effect given up your side in this dispute: you have as good as admitted that *it isn’t through reasoning that we are led to suppose the future to resemble the past and to expect similar effects from apparently similar causes*. This is the proposition that I intended to establish in the present section. If I’m right about it, I don’t claim it as any great discovery. If I am wrong, then there is an argument ·from past to future· which was perfectly familiar to me long before I was out of

my cradle, yet now I can't discover it. What a backward scholar I must be!

Section 5: Sceptical solution of these doubts The passion for philosophy, like that for religion, involves a certain danger. Although it aims to correct our behaviour and wipe out our vices, it may—through not being handled properly—end up merely encouraging us to carry on in directions that we're already naturally inclined to follow. We may set out to achieve philosophical wisdom and firmness, and to become satisfied with the pleasures of the mind ·as distinct from those of the body·, yet reason ourselves out of all virtue as well as all social enjoyment, ending up with a philosophy which (like that of Epictetus and other Stoics) is only a more refined system of selfishness. While we meditate on the vanity of human life, and focus our thoughts on the empty and transitory nature of riches and honours, perhaps we are really just finding excuses for our idleness, trying to get reason's support for our lazy unwillingness to be busy in the world. However, one kind of philosophy seems to run little risk of this drawback, because it doesn't join forces with any disorderly passion of the human mind, and can't get mixed up with any of our natural tendencies or inclinations; and that is the sceptical philosophy. The sceptics always talk of doubt and suspending judgment, of the danger of deciding too quickly, of keeping intellectual enquiries within narrow limits, and of giving up all theorizing that isn't in touch with common life and practice. So their philosophy is as opposed as it could be to the mind's idleness, its rash arrogance, its grandiose claims, and its superstitious credulity. This philosophy has a humbling effect on every passion except the love of truth; and that could never be carried too far. Given that this philosophy is almost always harmless and innocent, it's surprising that it should so often be criticized and stigmatized as libertine, profane, and irreligious. Perhaps the very feature that makes it so innocent also brings hatred and resentment against it. It doesn't encourage any bad feelings or habits, so it has few supporters; but it does oppose many vices and follies, which is why it has so many enemies! When it tries to limit our enquiries

to common life, this philosophy runs no risk of going too far and undermining the reasonings that we use in common life, pushing its doubts so far as to destroy all action and belief. Nature will always maintain its rights, and prevail in the end over any abstract reasoning whatsoever. ·That is, we shall continue to think and act in the ways that our human nature dictates—the ways that are natural to us—with no risk of our being deflected from these by philosophical considerations·. For example, I showed in the preceding section that whenever we reason from experience we take a step that isn't supported by any argument or intellectual considerations; but these experiential reasonings are the basis for almost all the knowledge we have, and there's no chance of their being dislodged by the discovery that they can't be justified by arguments. If we aren't led by argument to make inferences from past experience, we must be led by something else that is just as powerful—some other force that will have power in our lives as long as human nature remains the same. It would be worthwhile to explore what that other force is. Suppose that a highly intelligent and thoughtful person were suddenly brought into this world; he would immediately observe one event following another, but that is all he could discover. He wouldn't be able by any reasoning to reach the idea of cause and effect, because (firstly) the particular powers by which all natural operations are performed are never perceived through the senses, and (secondly) there is no reason to conclude that one event causes another merely because it precedes it. Their occurring together may be arbitrary and casual, with no causal connection between them. In short, until such a person had more experience he could never reason about any matter of fact, or be sure of anything beyond what was immediately present to his memory and senses.

Now suppose that our person gains more experience, and lives long enough in the world to observe similar objects or events occurring together constantly; now what conclusion does he draw from this experience? He immediately infers the existence of one object from the appearance of the other! Yet all his experience hasn't given him any idea or knowledge of the secret power by which one object produces

another; nor can any process of reasoning have led him to draw this inference. But he finds that he can't help drawing it: and he won't be swayed from this even if he becomes convinced that there is no intellectual support for the inference. Something else is at work, compelling him to go through with it. It is custom or habit. When we are inclined to behave or think in some way, not because it can be justified by reasoning or some process of the understanding but just because we have behaved or thought like that so often in the past, we always say that this inclination is the effect of 'custom'. In using that word we don't claim to give the basic reason for the inclination. All we are doing is to point out a fundamental feature of human nature which everyone agrees is there, and which is well known by its effects. Perhaps that is as far as we can go. Perhaps, that is, we can't discover the cause of this cause, and must rest content with it as the deepest we can go in explaining our conclusions from experience. Our ability to go that far should satisfy us; if our faculties won't take us any further, we oughtn't to complain about this. We do at least have here a very intelligible proposition and perhaps a true one: After the constant conjunction of two objects—heat and flame, for instance, or weight and solidity—sheer habit makes us expect the one when we experience the other. Indeed, this hypothesis seems to be the only one that could explain why we draw from a thousand instances an inference which we can't draw from a single one that is exactly like each of the thousand. •Reason isn't like that. The conclusions it draws from considering one circle are the same as it would form after surveying all the circles in the universe. But no man, having seen only one body move after being pushed by another, could infer that every other body will move after a similar collision. All inferences from experience, therefore, are effects of custom and not of •reasoning.

Custom, then, is the great guide of human life. It alone is what makes our experience useful to us, and makes us expect future sequences of events to be like ones that have appeared in the past. Without the influence of custom, we would be entirely ignorant of every matter of fact beyond what is immediately present to the memory and senses.

We would never know what means we should adopt in order to reach our ends; we couldn't employ our natural powers to produce any desired effect. There would be an end of all action and of most theorizing. …