

# Treatise of Human Nature

## Book I: The Understanding

David Hume

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[Brackets] enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought. Every four-point ellipsis . . . . indicates the omission of a brief passage that seems to present more difficulty than it is worth. Longer omissions are reported on, between [brackets], in normal-sized type.

First launched: July 2004

Last amended: April 2007

### **Contents**

<b>Section 11: The probability of chances</b>	<b>65</b>
<b>Section 12: The probability of causes</b>	<b>68</b>
<b>Section 13: Unphilosophical probability</b>	<b>71</b>
<b>Section 14: The idea of necessary connection</b>	<b>76</b>
<b>Section 15: Rules by which to judge of causes and effects</b>	<b>86</b>
<b>Section 16: The reason of animals</b>	<b>88</b>

### Section 11: The probability of chances

In order to give this system its full force and convincingness, we should turn briefly from *it* to *its consequences*, using the same principles to explain some other kinds of reasoning that are derived from the same origin.

Philosophers who have divided human reason into •knowledge and •probability, and have defined knowledge to be the evidentness that arises from the comparison of ideas, have to bring all our arguments from causes or effects under the general label ‘probability’. I have followed suit earlier in this book (everyone is entitled to use words as he sees fit); but really it is certain that in everyday talk we regard many arguments from causation as having conclusions that are certain enough to count as more than merely ‘probable’. It would seem ridiculous to say that it is only probable that •the sun will rise tomorrow, or that •all men must die; yet clearly we have no further assurance of these propositions than what experience gives us. For this reason it might be better, in order to preserve the common meanings of words while also marking the different levels of evidentness, to distinguish human reason into *three* kinds: knowledge, proofs, and probabilities. By •‘knowledge’ I mean the assurance arising from the comparison of ideas. By •‘proofs’ I mean arguments that are derived from the relation of cause and effect, and are entirely free from doubt and uncertainty. By •‘probability’ I mean the evidentness that is still accompanied by uncertainty. It is this third sort of reasoning that I proceed to examine ·in the present section·.

Probability—or reasoning from conjecture—can be divided into two kinds, one based on •chance, the other on •causes. I shall consider these in order.

The idea of cause and effect is derived from experience, which presents us with certain ·kinds of· objects constantly

conjoined with each other, and from this produces a habit of surveying them in that relation—a habit so strong that we must do violence to our thoughts to ·break it and· consider objects of those kinds in any other way. In contrast with this, *chance* is nothing real in itself; strictly speaking, it is merely the *negation* of a cause. So its influence on the mind is contrary to that of causation: and it is essential to chance that it leaves the imagination perfectly free to consider either the existence or the non-existence of the object that is regarded as contingent ·or dependent on chance·. A cause shows our thought the path to follow; in a way, it *forces* us to regard certain objects in certain relations. All that *chance* does is to destroy this compulsion of thought, leaving the mind in its original state of indifference, ·that is, evenly balanced between assent and dissent to the proposition· . . . .

Since it is of the essence of chance to produce complete indifference, the only way one chance can be greater than another is by being composed of a •greater number of •equal chances. If we said on any *other* basis that one chance could be greater than another, we would be saying that something about it made it superior to the other, pushing the outcome to its side more than to the other’s. That is, we would be allowing *a cause* into the story, thus negating what we had started out with, namely the supposition that we were dealing with *chance*. A perfect and total indifference is essential to chance, and one total indifference can never in itself be either greater or lesser than another. This truth is not special to my system. It is accepted by everyone who does calculations about chances.

This *combination* of chances that is needed to make one risk greater than another brings up a remarkable fact about •chance and •causation. The two are directly contrary, yet we can’t conceive the combination I have mentioned without supposing that •causes are mixed in among the •chances—

supposing •necessity in some details and total •indifference in others. When nothing constrains the chances, every notion that the most extravagant fancy can form is on an equal footing with every other, and there can't be any circumstance that could give one an advantage over the others. If we don't allow that there are some causes to make the dice fall, to keep their shape when doing so, and to come to rest on one of their sides, we can't make any calculation about the laws of chance. But if we suppose that *those* causes operate, and suppose that all the rest is indifferent and determined by chance, we can easily arrive at a notion of a superior combination of chances. A die that has four sides marked with a certain number of spots, and only two with another number, affords us an obvious and easy instance of this superiority. The mind is here limited by the causes to a precise number and quality of upshots—specifically to *six* possible upshots, each consisting in the die's coming to rest on one side—and at the same time it is undetermined in its choice of any of the six.

In our reasoning so far we have advanced three steps; that •chance is merely the negation of a cause, and produces total indifference in the mind; that •one negation of a cause and one total indifference can never be greater or lesser than another; and that •there must always be a mixture of causes among the chances if any reasoning about chances is to have a basis. Now we must move on, and consider what effect a greater combination of chances has on our mind—how does it influence our judgment and opinion? Here I can repeat all same arguments that I employed in examining the belief that arises from causes; and can prove in the same way that neither •demonstration nor •probability has any role in getting a greater number of chances to produce our assent .  
•I shall take these one at a time•.

•Regarding •demonstration•: It is indeed obvious that mere comparison of ideas can never reveal to us anything relevant to our present question: it is impossible to *prove with certainty* that any outcome *must* fall on the side that has the greater number of chances. To suppose there is any certainty about this would be to overthrow what I have established about the perfect equality of opposing •single• chances and the indifference of the mind with respect to them.

•Regarding •probability•: It might be said that though in an opposition of chances it is impossible to determine *with certainty* on which side the outcome will fall, we nevertheless can say for sure that it is *more likely and probable* that it will fall on the side that has the greater number of chances than that it will fall where there is a smaller number. If this is said, I reply:

What do you mean by 'likelihood and probability'? The likelihood and probability of chances is a greater number of equal chances; so when you say that it is 'likely' that the outcome will fall on the side which has the greater number, rather than on one having a lesser number of chances, all you are saying is that where there is a greater number of chances there is actually a greater, and where there is an lesser there is a lesser. These are identical propositions [= 'tautologies'], and of no significance.

So the question remains: *how* does a greater number of equal chances operate on the mind to produce belief or assent? Apparently it's not by arguments derived from demonstration, or by ones from probability.

In order to clear up this difficulty, consider the following case:

Someone takes a die that has a circle on four of its sides and a square on the other two; he puts this die

into a box, intending to throw it.

Obviously, he must consider a circle to be more probable than a square; *that a circle will fall uppermost* is the prediction that he must prefer. In a way he *believes* that a circle will come uppermost, but with hesitation and doubt in proportion to the number of chances of a square; and if the number of 'square' chances were lessened, thus increasing the gap between it and the number of 'circle' chances, his belief would become less hesitant and more confident. This belief arises from his mind's operations on the simple and limited object before us, so we ought to be able to discover and explain it. We have nothing but one single die to think about, in order to grasp one of the most curious operations of the understanding. [By 'curious' Hume probably means something like 'intricate and challenging'.] We should attend to three facts about the die that I have described. •First, certain causes—gravity, solidity, cubic shape, etc.—will cause it to fall, remain unaltered during the fall, and come down with one side uppermost. •Secondly, it has a particular number of sides, which are supposed indifferent—that is, which are supposed to be such that there is no reason to expect any one rather than other to fall uppermost. •Thirdly, on each side a certain figure is inscribed. These three facts constitute the whole nature of the die, so far as we are concerned here, and so they are the only things the mind can go by when forming a judgment about how the die will fall. So let us consider slowly and carefully what influence these facts must be having on our thought and imagination.

•First, I have already observed that custom makes the mind pass from any cause to its effect, and that when one appears it is almost impossible for the mind not to form an idea of the other. . . . When it thinks of the die as no longer supported by the box, the mind can't without •violence •to itself regard it as suspended in the air. Rather, it •naturally

imagines it as lying on the table with one of its sides uppermost. This is an effect of the admixture of *causes* that is needed if we are to make any calculation about *chances*.

•Secondly, we are supposing that though the die *must* fall and turn up one of its sides, there is nothing to fix the particular side, this being determined entirely by chance. The very nature and essence of *chance* is a negation of *causes* and leaving the mind in complete indifference among those outcomes that are supposed to be contingent, .i.e. at the mercy of chance. So when the *causes* make our thought consider the die as falling and turning up one of its sides, the *chances* present all these sides as equal, and make us regard each of them as being just as probable and possible as each of the others. The imagination passes from the cause to the effect—from the throwing of the die to the turning up one of the six sides—and feels itself as somehow unable to make this process stop short or terminate in some other idea. But only one side can lie uppermost at a time, and the causal factors don't make us think of the sides as all lying uppermost together, which we regard as impossible; nor do they direct us with their entire force to any particular side, for if they did, the chosen side would be considered as certain and inevitable. Rather, the causal factors direct us to the whole six sides in such a way as to divide their force equally among them. We conclude in general that some one of them must result from the throw; we run all of them over in our minds; the forces acting on our thought are common to all of them; but what they exert with respect to any one outcome is no more than what is suitable given what proportion of the whole it makes. This is how the original impulse, and consequently the liveliness of thought arising from the causes, is divided and split in pieces by the intermingled chances.

So now we have seen the influence of the two first aspects

of the die—the causes, and the number and indifference of the sides—and have learned how they give a push to our thought, and divide that push into as many parts as there are sides. We must now look into the effects of •the third factor, namely the figures inscribed on the sides. Obviously, where several sides have the same figure inscribed on them, they must work together in their influence on the mind, bringing to bear on *one* image or idea of the figure all those divided pushes that were scattered over the several sides that have that figure on them. If we were asking ‘Which *side* will fall uppermost?’, all the sides would be perfectly equal, and no-one could have any advantage over any other. But the question is ‘Which *figure* will fall uppermost?’; and as the same figure is exhibited by more than one side, it is obvious that the pushes belonging to all *those* sides must come together on that one figure, and become stronger and more forcible by their union. In our example, four sides have a circle, two have a square. The pushes on the circle are therefore more numerous than the pushes on the square. But as the outcomes are contrary—it can’t happen that circle and square *both* turn up in a single throw—the pushes likewise become contrary; the weaker force destroys the stronger as far as it has strength to do so; •and what remains of the stronger one after the weaker has expended itself is the mind’s probability- judgment about the outcome•. The liveliness of the idea is always proportional to the degrees of the push or tendency to make the transition; and according to my doctrine that liveliness of the idea is belief.

### Section 12: The probability of causes

The only use for what I have said about the probability of •chances is to help us explain the probability of •causes,

since it is commonly allowed by philosophers and scientists that what plain people call ‘chance’ is really a secret and concealed cause. The latter sort of probability, therefore, is what we must chiefly examine.

The probabilities of causes are of several kinds, but all come from the same source, namely the association between a present impression and certain ideas. As the habit that produces the association comes from the *frequent* conjunction of •kinds of• objects, it •can’t spring into existence all at once, but• must arrive at its full force *gradually*, gaining new force from each instance that we observe. The first instance has little or no force, the second adds a little to it, the third becomes still more noticeable; and it is by these slow steps that our judgment arrives at full confidence. But before it reaches such completeness it passes through several lower degrees, and in all of them it is to be regarded as only a presumption or probability. So the gradation from probabilities to proofs is in many cases imperceptible, and large differences between these kinds of confidence are easier to perceive than small ones.

Although this sort of probability comes before proof, and naturally takes place before any entire proof can exist, when people reach maturity they no longer have anything to do with it. It often happens of course that someone with the most advanced knowledge achieves only an imperfect experience of some particular conjunctions of events, which naturally produces •in him• only an imperfect habit and transition; but then we must consider that the mind, having formed another observation concerning the connection of causes and effects, gives new force to its reasoning from that observation [Hume’s exact words from ‘;’ to here]; and by this means the mind can build an argument on one single experiment if it is properly prepared and examined. What we have found once to follow from an object •of some kind• we

conclude will always follow from it [= 'from objects of that kind']; and if we don't always build on this maxim as a certainty, it is not because •we haven't observed a large enough number of experiments but because •we have often met with instances to the contrary. And that leads us to the topic of this section, namely the second kind of probability, where there is a contrariety in our experience and observation.

It would be very happy for men in the conduct of their lives and actions if the same kinds of objects were always conjoined, and we had nothing to fear but the mistakes of our own judgment, with no reason to allow for the uncertainty of Nature. But as it is often found that one observation conflicts with another, and that causes and effects don't follow in the same way that we have experienced in the past, I have to modify my theory so as to take into account this uncertainty, paying attention to the contrariety of outcomes. I start with the question of the nature and causes of this contrariety.

Common folk, who judge things according to their first appearance, attribute the uncertainty of outcomes to an uncertainty in the causes—they think that the causes often fail to have their usual influence even when they don't meet with any obstacle to their operation. But philosophers and scientists, observing that almost every part of Nature contains a vast variety of mechanisms and forces that are hidden from us because they are so small or so distant, think it at least possible that the contrariety of outcomes may come not from any contingency [here = 'unreliability'] in the cause but rather from the secret operation of contrary causes. This possibility becomes certainty when they bear in mind that when any contrariety of effects is studied carefully it always turns out that it *does* come from a contrariety of causes, and proceeds from their mutual hindrance and opposition. A peasant can give no better reason for a clock's stopping than to say 'It often doesn't go right'; but a clockmaker easily sees that

the same force in the spring or pendulum always has the same influence on the wheels, but has failed of its usual effect because of a grain of dust that puts a stop to the whole movement. Having observed various cases of this general kind, philosophers and scientists form a maxim that the connection between *all* causes and effects is equally necessary, and that its seeming unreliability in some cases comes from the secret opposition of contrary causes.

But however philosophers and scientists may differ from common folk in how they explain the contrariety of outcomes, their inferences from it are always of the same kind and based on the same principles. A contrariety of outcomes in the past may give us a kind of hesitating belief for the future, in either of two ways. First, by producing an imperfect habit and transition from the present impression to the related idea. When the conjunction of any two objects is frequent but not entirely constant, the mind is pushed towards passing from one object to the other, but not with such a complete habit as when the conjunction has been without exceptions and all the instances we have ever met with are uniform and of a piece. . . . There is no doubt that this is sometimes what happens, producing the tentative inferences we draw from contrary phenomena; but I am convinced that it isn't what mainly influences the mind in this sort of reasoning. When our mind is moved purely by our habit of transition, we make the transition without any reflection, and don't have a moment's delay between seeing one object and believing in the other that is often found to accompany it. The custom doesn't depend on any deliberation, so it operates immediately, without allowing time to think. But it is very seldom like this in our probable reasonings. . . . In the latter usually take account of the contrariety of past outcomes, knowing that we are doing so: we compare the different sides of the contrariety, and carefully weigh the evi-

dence that we have on each side. From this we can conclude that our reasonings of this kind arise from habit not *directly* but *in an oblique manner* which I must now try to explain.

Obviously, when a kind of object has contrary effects at different times, we base our opinions about them purely on our past experience, and always consider as possible any effects that we have observed to follow from this kind of object. And just as past experience regulates our judgments about the *possibility* of these effects, so it also regulates what we think about their *probability*; and we always take to be the most *likely* the effect that has been the most *common*. So we have two things to think about here: *why* we treat the past as a standard for the future, and *how* we extract a single judgment from a contrariety of past outcomes.

First the question of *why*: The supposition that the future resembles the past isn't based on arguments of any kind, and comes solely from a habit that makes us expect for the future the same sequence of events as we have been accustomed to in the past. This habit or push to transfer the past to the future is full and perfect; and therefore the first impulse of the imagination in this kind of reasoning is full and perfect too.

Secondly the question of *how*: When we look back on past experiences and find them to be contrary, this push to transfer the past to the future, though full and perfect in itself, doesn't take us to any one steady object, but offers us a number of disagreeing images in a certain order and proportion. So in this case the first impulse of the imagination is split up and diffuses itself over all those images, each of them having an equal share of the force and liveliness that the impulse gives. Any of these past outcomes may happen again, and we think that when they do happen they will be mixed in the same proportion as in the past.

[A long paragraph spelling this out in more detail. A

notable episode is this:] Each new experience of a cause-effect pair is like a new brush-stroke, which gives additional liveliness to the colours without altering any of the shapes.

Summing up, then: experiences with contrary outcomes produce an imperfect belief, either by weakening the habit, or by dividing and then recombining the perfect habit that makes us conclude in general that instances of which we have no experience must resemble those of which we have.

To justify still further this account of the second sort of probability, where we reason with knowledge and reflection from a contrariety of past experiences, I shall propose some further considerations. (They have an air of subtlety, but don't hold that against them. Sound reasoning oughtn't to lose any of its force through being subtle; just as matter retains its solidity in air and fire and animal spirits, as well as in larger and more perceptible forms.) [Two points about that sentence. It involves a half-suppressed pun: it was standardly said that air etc. differ from rocks etc. in being more 'subtle', meaning more finely divided. When Hume implies that air is as 'solid' as rock, he means that it won't share its space with any other bodies, any more than rock will.]

[The two-page argument that follows is subtle and ingenious, but it is exhausting to read and follow, and seems not to add *much* to what Hume has already said. He follows it with something else, equally demanding, that he describes as 'almost the same argument in a different light'. This material is omitted from the present version.]

I am aware of how abstruse all this reasoning must appear to the general run of readers—people who aren't accustomed to going so deeply into the intellectual faculties of the mind, and so will be apt to reject as fanciful anything that doesn't fit with common received notions and with the easiest and most obvious principles of philosophy. You do have to take some trouble to follow these arguments of mine, though it takes very *little* trouble to see to see how bad the rival

accounts are—to see the imperfection of every plain-man hypothesis on this subject, and how little light philosophy has so far been able to cast in these elevated and challenging inquiries. If you can once be fully convinced that

- Nothing in any object, considered in itself, can give us a reason for drawing a conclusion about anything other than that object, and
- Even after observing the frequent or constant conjunction of objects, we have no *reason* to draw any inference about any object other than those of which we have had experience,

these two principles will throw you so loose from all common systems that you will have no trouble accepting other theses that may appear very extraordinary. These principles proved to be sufficiently convincing when applied to our most certain reasonings from causation; but I venture to say that they become even more believable when applied to the conjectural or probable reasonings that are our present topic.

[•Hume then goes again through his account of probabilistic reasoning, bringing out how it requires (and makes plausible) the two principles in question. •Then two paragraphs in which he presents ‘two reflections which may deserve our attention’. One concerns the difference between *experiencing* contrary outcomes and merely *imagining* them. The other concerns (in effect) the mathematics of adding belief-strengths, which Hume says has ‘a parallel instance in the affections’. The core of his view about the latter is that ‘a man who desires a thousand pounds has in reality a thousand or more desires which unite together and seem to make only one passion’.]

Beside these two sorts of probability—derived from •imperfect experience and from •contrary outcomes—there is a third arising from •analogy, which differs from them in some significant respects. According to the account I have

given, all kinds of reasoning from causes or effects are based on two things: •the constant conjunction of any two kinds of objects in all past experience, and •the resemblance of a present object to one of the kinds. These have the effect that •the present object invigorates and enlivens the imagination, and •the resemblance together with •the constant union conveys this force and liveliness to the related idea, which we are therefore said to *believe*. If you weaken either the •union or the •resemblance, you weaken the force of transition and thereby weaken the belief that arises from it. The liveliness of the first impression can’t be *fully* transferred to the related idea unless •the conjunction of objects of their kinds has been constant and •the present impression perfectly resembles the past ones whose union we have been accustomed to observe. In probabilities of chance and of causes (discussed above) it is •the constancy of the union that is diminished; and in the probability derived from analogy it is only •the resemblance that is diminished. Without *some* degree of resemblance there can’t be any reasoning. But this resemblance can be greater or smaller, and the reasoning is proportionally more or less firm and certain. An experience loses some of its force when transferred to instances that don’t exactly resemble it; but as long as there is some resemblance remaining there is still a basis for probability.

### Section 13: Unphilosophical probability

The three kinds of probability that I have described are all accepted by philosophers as reasonable bases for belief and opinion. But there are other kinds that are derived from the same principles but haven’t had the good fortune to be accepted in the same way. In this section I shall discuss four of them.

The **first** probability of this kind can be described like this. The vividness of the inferred idea may be lessened by a lessening of •the union or of •the resemblance, and also—I now add—by a lessening of •the impression. . . . The argument that we base on a remembered matter of fact is more or less convincing according to whether the fact is recent or remote in time. This source for difference in degrees of evidentness is not accepted by philosophy as solid and legitimate, because •if it is accepted, then• an argument must have more force today than it will have in a month's time. But despite the opposition of philosophy, the remoteness-in-time aspect certainly has a considerable influence on the understanding, and secretly changes the authority of an argument, depending on *when* it is put to us. . . .

A **second** source of difference in our degrees of belief and assurance, always disclaimed by philosophers but always effective, is this. An experience that is recent and fresh in the memory affects us more, having a greater influence on judgment as well as on the passions than one that is in some measure obliterated. A lively impression produces more assurance than a faint one, because it has more initial force to pass on to the related idea, which thereby gets more force and liveliness. Similarly with a recent observation: the custom and transition is more complete in that case, and preserves better the initial force of what is transferred. Thus a drunkard who has seen his companion die from a drinking-spree is struck with that instance for some time, and dreads having such an accident himself; but as the memory of it gradually decays, his former sense of security returns and the danger comes to seem less certain and real.

I add as a **third** instance •of unphilosophical probability• the following. Although our reasonings from •proofs are considerably different from our reasonings from •probabilities, the former kind of reasoning often slides imperceptibly into

the latter simply because the proof in question involves so *many* connected arguments. When an inference is drawn immediately from an object without any intermediate cause or effect, the conviction is much stronger . . . . than when the imagination is carried through a long chain of connected arguments, however infallible the connection of each link may be thought to be. The liveliness of all the ideas comes from the original impression, through the customary transition of the imagination; and it is obvious that this liveliness must be gradually lessened in proportion to the distance that the transition has to cover. Sometimes this distance does more to reduce conviction than even contrary experiences would have done; and a man may receive a livelier conviction from a probable reasoning that is brief and immediate than from a long chain of consequences, even if the latter is sound and conclusive in each part. Indeed, reasons of the latter kind seldom produce any conviction: one must have a very strong and firm imagination to preserve the evidentness through so many stages right to the end!

An odd point arises here, which I shall state in the form of an objection to what I have been saying:

There is no point of ancient history of which we can have any assurance except through many millions of causes and effects, and through a chain of inferences of an almost immeasurable length. Before the knowledge of the fact could come to the first historian, it must be conveyed through many mouths; and after it is committed to writing, each new copy is a new object whose connection with the previous one is known only by experience and observation. From what you have been saying about strength of belief it seems to follow that the evidentness of all ancient history must now be lost, or at least will be lost in time as the chain of causes gets ever longer. But it seems contrary to common sense to think that if the world of scholarship and the art of printing continue in the same way that they do now, our descendants will some day come to doubt that there ever was such a man as Julius Caesar. So this looks like an objection to the account you have been giving. If belief consisted (as you say it does) only in a certain liveliness conveyed from an original impression, it would fade in accordance with the length of the transition, and would eventually have to be utterly extinguished. And if belief is sometimes *not* capable of such an extinction, it must be something different from that liveliness.

(Before I answer this objection I should remark that this line of thought has generated a very celebrated argument against the Christian religion, with just one difference: in the anti-Christianity argument it is supposed that each link of the chain of human testimony is only probabilistically sound, and to be in itself liable to some doubt and uncertainty. And it must be admitted that in *this* way of looking

at the subject—which is not the correct one—every history and tradition must indeed eventually lose all its force and convincingness. Every new probability lessens the original conviction; and however great that conviction may be, it can't continue under such repeated lessenings. This is true in general, though we shall find in 1<sub>iv</sub> that there is one very memorable exception, a vastly important one for our present topic of the understanding.)

Meanwhile, to answer the preceding objection on the supposition that historical evidence amounts initially to a complete *proof*, bear in mind that though the links connecting any historical fact with a present impression are very numerous, they are all *of the same kind*, depending only on the reliability of printers and copyists. One edition is succeeded by another, and that by a third, and so on, till the chain reaches the history book we are now reading. There is no variation in the steps. After we know one, we know them all; and after we have taken one inferential step we can't hesitate to take all the others. This is enough to preserve the convincingness of history. . . .

A **fourth** unphilosophical sort of probability, which will be the topic of the remainder of this section, is derived from general rules that we rashly form to ourselves—rules that are the source of what we properly call *prejudice* [the Latin root of which means 'pre-judgment']. An Irishman can't have wit, and a Frenchman can't have solidity; so even in particular cases where the Irishman talks entertainingly and the Frenchman talks judiciously, we have held such a prejudice against them that we think they must be a dunce and a fop respectively, in spite of sense and reason.

Human nature is very given to errors of this kind, and perhaps this nation as much as any other! Why do men form general rules and allow them to influence their judgment, even contrary to present observation and experience?

I think that it comes from the very same sources as to all judgments about causes and effects. [In the rest of this paragraph, Hume reminds us of his account of causal and probabilistic reasoning, especially stressing how the latter may be weakened by imperfect resemblances amongst the instances.]

Although custom is •the basis of all our judgments, sometimes it has an effect on the imagination •in opposition to the judgment, and produces a contrariety in our views about the same object. Let me explain. In most kinds of causes there is a complication of factors, some essential and others superfluous, some absolutely required for the production of the effect and others present only by accident. Now, when these superfluous factors are numerous and remarkable and frequently conjoined with the essential factors, they influence the imagination so much that even in the absence of something essential they carry us on to the idea of the usual effect, giving it a force and liveliness that make it superior to the mere fictions of the imagination. We can correct this propensity by reflecting on the nature of the factors on which it is based; but it is still certain that custom starts it off and gives a bias to the imagination.

To illustrate this by a familiar example: a man who is hung out from a high tower in a cage of iron can't help trembling when he sees the drop below him, even though his *present* experience of the solidity of the iron that supports him tells him that he is perfectly safe from falling, and the idea of falling and harm and death come only from custom and *past* experience. That custom goes beyond the instances from which it is derived and to which it perfectly corresponds—instances in which heavy things are released *without* support and fall to the ground—and influences his ideas of objects that resemble the others in some respects but don't precisely fit the same rule. The factors of •depth

and descent impress him so strongly that their influence can't be destroyed by the contrary factors of •support and solidity, which ought to make him feel perfectly safe. His imagination runs away with its object, *the thought of falling*, and arouses a passion (*fear*) proportional to it. That passion reacts back on the imagination, and enlivens the idea; this newly enlivened idea has a new influence on the passion, increasing its force and violence; so his imagination and his feelings mutually support each other, causing the whole *situation* to have a very great influence upon him.

But why need we look for other instances, when *the present subject of unphilosophical probabilities* offers us such an obvious one, in the conflict between judgment and imagination that arises from custom? I shall explain this by presenting an apparent difficulty for my account:

According to my theory, reasonings are merely effects of custom, and custom's only influence is to enliven the imagination and give us a strong conception of some object. So it seems to follow that our judgment and our imagination can never be in conflict—that custom can't operate on the imagination in such a way as to put it in opposition to the judgment. *But* we have seen that they *do* sometimes conflict with one another; so this is a problem for my theory.

The only solution for this difficulty is to bring in the influence of *general rules*. In section 15 I shall call attention to some general rules by which we ought to regulate our judgment about causes and effects; and these rules are based on the nature of our understanding, and on our experience of how it operates in our judgments about objects. Through those rules we learn to distinguish accidental circumstances from effective causes; and when we find that an effect can be produced in the absence of a certain factor we conclude that that factor is not part of the effective cause, however

often it is conjoined with it. But this frequent conjunction necessarily makes the factor in question have some effect on the imagination, in spite of the opposite conclusion from general rules; and so the opposition of these two principles produces a contrariety in our thoughts, and makes us ascribe one inference to our judgment, and the other to our imagination. The general rule is attributed to our judgment because it is more extensive and constant; the exception to the general rule is credited to the imagination because it is more capricious and uncertain.

Thus our general rules are in a way set in opposition to each other. When an object appears that resembles some cause in very considerable respects, the imagination naturally carries us to a lively conception of the usual effect, even if the object differs from that cause in the most significant and effective respects. Here—in this *wrong* transition to an idea of the usual effect—is the first influence of general rules. But when we review this act of the mind and compare it with the more general and authentic operations of the understanding, we find it to be irregular and destructive of all the most established principles of reasoning, which causes us to reject it. This is a second influence of general rules, and implies the condemnation of the first one. Sometimes one prevails, sometimes the other, according to the disposition and character of the person. Ordinary folk are commonly guided by the first, and wise men by the second. Meanwhile sceptics can enjoy this prospect of a new and notable contradiction in our reason, and of seeing all philosophy ready to be subverted by a force in human nature and then saved by giving a new direction to the very same force! The following of general rules is a very unphilosophical sort of probability, but it is only by following them that we can correct this and all other unphilosophical probabilities.

Since we have instances where general rules act on the

imagination contrary to the judgment, we needn't be surprised to see their effects increase when they combine with the judgment, presenting to us ideas that have more force than any others. Everyone knows there is an indirect manner of insinuating praise or blame, which is much less shocking than the open flattery or censure of any person. Even if someone does *communicate* his sentiments by such secret insinuations, making them known just as certainly as openly revealing them would, their influence is not equally strong and powerful. Someone who lashes me with concealed strokes of satire doesn't move me to indignation as intensely as if he had flatly told me I was a fool and coxcomb, though I understand his meaning just as well as I would if he had done that. This difference is to be attributed to the influence of general rules.

Whether a person openly abuses me or slyly indicates his contempt, in neither case do I *immediately* perceive his sentiment or opinion; I become aware of it only by *signs*, that is, by its effects. So the only difference between these two cases is that in openly revealing his sentiments he uses signs that are general and universal, while in secretly indicating them he uses signs that are more singular and uncommon. And when the imagination runs from the present impression of the man's words or behaviour to the absent idea of his hostility or contempt, it makes the transition more easily—and so conceives the object with greater force—when the connection is common and universal than when it is more rare and particular. . . .

[Hume adds a further paragraph and a half, adding detail to this, and offering a reflection on reasons why *sometimes* 'scurrility is less displeasing than delicate satire'.]

To this account of the different influence of open and concealed flattery or satire, I shall add the consideration of another phenomenon that is analogous to it. There are many

violations of codes of honour that the world —though not excusing them—is more apt to *overlook* when the appearances are saved and the transgression is secret and concealed. (This holds for both men and women.) People who know perfectly well that the fault has been committed pardon it more easily when the proofs seem somewhat indirect and ambiguous than when they are direct and undeniable. In both cases the same idea is presented, and strictly speaking is equally assented to by the judgment; but its influence is different because of the different ways in which it is presented. . . . The difference is just this: in the first case the sign from which we infer the blamable action is single, and suffices all on its own to be the basis for our reasoning and judgment; whereas in the second case the signs are numerous, and decide little or nothing when taken alone and not accompanied by many minute and almost imperceptible factors. Any reasoning is convincing in proportion as it is single and united to the eye, and gives less work to the imagination in collecting its parts and going from them to the correlative idea that is the conclusion. . . .

[In a final pair of paragraphs Hume re-states his main conclusions in sections 11–13, contending that they are confirmed by their ability to interlock and solve problems, and that their success helps to confirm his account of belief.]

### Section 14: The idea of necessary connection

Having thus explained *how* we reason beyond our immediate impressions, and conclude that such and such causes must have such and such effects, we must now retrace our steps and pick up again the question that first occurred to us, and that we dropped along the way (near the end of section 2). The question is: What is our idea of *necessity*, when we say

that two objects are *necessarily* connected? As I have often said already, if we claim to have such an idea we must find some impression that gives rise to it, because we have no idea that isn't derived from an impression. So I ask myself: In what objects is necessity commonly supposed to lie? And finding that it is always ascribed to *causes* and *effects*, I turn my attention to two objects that are supposed to be related as cause and effect, and examine them in all the situations in which they can occur. I see at once that they are contiguous in time and place, and that the one we call 'cause' precedes the one we call 'effect'. In *no* instance can I go any further: I can't find any third relation between these objects. So I take a broader view, and consider a number of instances in which I find objects of one kind always existing in relations of contiguity and succession with objects of another kind. At first sight this seems to be pointless: the reflection on several instances only repeats the same objects, so it can't give rise to any new idea. But on further enquiry I find that the repetition is *not* the same in every respect. It produces a new impression ·that I don't get from any single instance·, and through that impression it gives me the idea ·of necessity· which I am at present examining. For after a frequent repetition I find that on the appearance of one of the objects, custom *makes* the mind think of its usual attendant, and think of it more vividly on account of its relation to the first object. So it is this impression, this being-made-to-think-of-the-effect, that gives me the idea of necessity.

I'm sure that you will have no trouble accepting this result, as being an obvious consequence of principles that I have already established and have often employed in my reasonings. This obviousness, both of the first principles and of the inferences from them, may seduce you into incautiously accepting the conclusion, making you imagine that it

contains nothing extraordinary or worth thinking about. But although such casualness may make my reasoning easier to accept, it will also make it easier to forget; so I think I should warn you that I have just now examined one of the most elevated questions in philosophy, the one that seems to involve the interests of all the sciences—namely the question about *the power and efficacy of causes*. That warning will naturally rouse your attention and make you ask for a fuller account of my doctrine, as well as of the arguments on which it is based. This request is so reasonable that I can't refuse to comply with it, especially because I have hopes that the more my principles are examined the more forceful and convincing they will be.

There is no question which, on account of its importance as well as its difficulty, has caused more disputes among both ancient and modern philosophers than this one about the •efficacy of causes, •the quality that *makes* an effect follow a cause. But before they embarked on these disputes, I think, they would have done well to examine what *idea* we have of the •efficacy they are arguing about. This is what I find principally lacking in their reasonings, and what I shall here try to provide.

I begin by observing that the words 'efficacy', 'agency', 'power', 'force', 'energy', 'necessity', 'connection', and 'productive quality', are all nearly synonymous, which makes it absurd to employ any of them in defining any of the others. This observation rejects at once all the common definitions that philosophers have given of 'power' and 'efficacy'. Our search for the idea must be directed not to these definitions but to the impressions from which it was originally derived. If it is a compound idea, it must arise from compound impressions. If simple, from simple ones.

I believe that the most widely accepted and most popular [here = 'appropriate for ordinary folk who lack philosophical skills and

knowledge'] explanation of our idea of power is to say this:

We find from experience that various new productions occur in the world of matter, such as the motions and variations of bodies; and we conclude that there must somewhere be a power capable of producing them; and this reasoning brings us at last to the idea of power and efficacy. (Thus Mr Locke, in his chapter on Power) [*Essay Concerning Human Understanding* II.xxi.1])

But to be convinced that this explanation is more popular than philosophical we need only to remember two very obvious principles. First, •that reason alone can never give rise to any original idea, and secondly •that reason, as distinct from experience, can never make us conclude that a cause or productive quality is absolutely required for every beginning of existence. I have explained these two points already, so I shan't go on about them here.

I shall only infer from them that since •reason can never give rise to the idea of *efficacy*, that idea must be derived from •experience—from particular instances of this efficacy which get into the mind through the common channels of sensation or reflection. . . . If we claim to have a sound idea of this efficacy, we must produce some *instance* in which the efficacy is plainly revealed to the mind and its operations are obvious to our consciousness or sensation. If we evade this demand, we are admitting that the •so-called• idea •of efficacy• is impossible and imaginary; since the only other escape is to plead that the idea is an innate one, and •that escape-route is blocked because• the theory of innate ideas has been already refuted and is now almost universally rejected in the learned world. What we have to do, then, is to find some natural cause-effect pair in which the mind can grasp—clearly, unambiguously, and securely—how the cause operates and what gives it its efficacy.

We don't get much encouragement in this from the enormous variation that we find in the opinions of philosophers who have claimed to explain the secret force and energy of causes. Various philosophers have variously contended that bodies operate by

their substantial form,  
 their accidents or qualities,  
 their matter and form,  
 their form and accidents,

certain powers and faculties distinct from all the above.

Further, all these opinions are mixed and varied in a thousand different ways, creating a strong presumption that none of them is solid or credible, and that there are simply no grounds for thinking that any of the known qualities of matter has any kind of efficacy. This presumption gains strength when we consider that substantial forms and accidents and faculties are *not* really among the known properties of bodies, but are perfectly unintelligible and inexplicable. Obviously philosophers would never have had recourse to such obscure and uncertain notions if they had met with any satisfaction in ideas that are clear and intelligible; especially in such an affair as this, which must be an object of •the simplest understanding if not of •the senses. The bottom line is this: we can conclude that it is impossible in any one instance •of a cause-effect pair• to show what it is that contains the force and agency of the cause; and that in this respect the most refined understandings are on a par with the plain man in the street. If you think you can refute this assertion, you needn't take the trouble to invent any long arguments; all you need to do is to show us an instance of a cause where we discover the power or operating force. We often have to use this kind of challenge, as being almost the only means of proving a negative in philosophy.

The failures of their attempts to pin down this *power* has

finally obliged philosophers to conclude that the ultimate force and efficacy of Nature is perfectly unknown to us, and that it is no use looking for it among the known qualities of matter. They are almost unanimous about this; where their opinions differ it is in what they infer from it. Some of them, especially the Cartesians, have satisfied themselves that we are acquainted with *the whole essence* of matter, which they say consists in *extension*. Now, extension doesn't imply actual motion, but only mobility; so they naturally conclude that when matters moves, the energy that produces the motion can't lie in the extension, •which means (for them) that it can't lie in the matter•. So, they conclude, matter is not endowed with any efficacy, and can't possibly (unaided) communicate motion or produce any of the effects that we ascribe to it.

This conclusion leads them to another which they regard as entirely inescapable. •They argue like this•:

Matter is in itself entirely inactive and deprived of any power to produce or continue or communicate motion; but these effects are evident to our senses, and the power that produces them must be *somewhere*. So it must lie in God, the divine being who contains in his nature all excellency and perfection. So God is the first mover of the universe: he not only first created matter and gave it its initial push, but also through a continuing exertion of his omnipotence he keeps it in existence and gives it all its motions and configurations and qualities.

This opinion is certainly very interesting, and well worth our attention; but if you think for a moment about *why* it has come up for us in our present inquiry, you will see that we needn't examine it in detail here. We have settled it as a principle that, because all ideas are derived from some previous perceptions, we can't have any idea of •power

and efficacy unless instances can be produced in which this •power is perceived to exert itself. These instances can never be discovered in *body*, so the Cartesians have relied on their principle of innate ideas and had recourse to a God whom they think to be the only *active* being in the universe, and the immediate cause of every alteration in matter. But given the falsity of the principle of innate ideas, the supposition of a God can't be of any use to us in accounting for the idea of agency which we can't find among the objects that are presented to our senses or those that we are internally conscious of in our own minds. For if every idea is derived from an impression, the idea of a God must come from the same origin; and if no impression, either of sensation or reflection, implies any force or efficacy, it is equally impossible to discover or even imagine any such active force in God. So when these •Cartesian• philosophers argue that

No efficacious force can be discovered in matter, so no such force should be attributed to matter,

they ought by parity of reasoning to argue

No efficacious force can be discovered in God, so no such force should be attributed to God.

If they regard that conclusion as absurd and impious, as indeed it is, I shall tell them how they can avoid it—namely, admitting at the outset that they have no adequate *idea* of power or efficacy in any object, since they can't discover a single instance of it in bodies or in minds, in divine natures or in creaturely ones.

The same conclusion is unavoidable on the hypothesis of those who maintain the efficacy of subordinate causes, and credit matter with having a power or energy that is real but *derivative*. For they grant that this energy doesn't lie in any of the known qualities of matter, so •for them as for the Cartesians• the difficulty still remains about the origin of the *idea* of it. If we really have an idea of power we can attribute

power to an •unknown quality; but

the idea couldn't be derived from a quality that we don't know, and there is nothing in •known qualities that could produce the idea,

so it follows that it is mere self-deception for us to imagine we have any idea of this kind in the way we ordinarily think we do. All ideas are derived from and represent impressions. We never have any impression that contains any power or efficacy. So we never have any idea of power.

Some have asserted that we feel an energy or power in our own mind, and that having acquired the idea of power in this way we transfer that quality to matter, where we can't immediately discover it. The motions of our body and the thoughts and sentiments of our mind (they say) obey the will, and we needn't look beyond that for a sound notion of force or power. But to convince us of how fallacious this reasoning is, we need only notice that the will—which they are taking to be a cause—doesn't have a discoverable connection with its effects any more than any material cause has one with *its* effect. We are so far from perceiving the connection between •an act of volition and •a bodily movement that it is generally agreed that the powers and essence of thought and matter come nowhere near to providing an explanation for the relation between willing to make a certain movement and making it. And the will's power over our mind is no more intelligible. In that case •too• the effect is distinguishable and separable from the cause, and couldn't be foreseen without the experience of their constant conjunction. We can effectively command our thoughts up to a certain point, but not beyond that; and it is only by consulting experience that can know where the boundaries to our authority lie. (•For example, I can *think about horses* just by choosing to think about horses; but I can't *rapidly run through thoughts of the first nineteen prime numbers* or *believe that the earth is flat*

just by choosing to do so; and it is only from experience that I know what I can do just by choosing to and what I can't—none of it 'stands to reason', none of it can be seen to be expectable given the nature of the will's command over thoughts.) In short, so far as our present topic goes, the actions of the mind are like the actions of matter: all we perceive is constant conjunction, and we can't reason beyond it. . . . We have no chance of attaining an idea of force by consulting our own minds.<sup>1</sup>

It has been established as a certain principle that general or abstract ideas are nothing but individual ones looked at in a certain way, and that when we reflect on any object we have to bring into our thought its particular degrees of quantity and quality—just as the object itself has to have particular degrees of quantity and quality. So if we have any idea of *power in general* we must also be able to conceive some specific kind of power; and as power can't exist alone but is always regarded as an attribute of some existing thing, we must be able to place this power in some particular thing and to conceive that thing as having a real force and energy by which such and such a particular effect *necessarily* results from its operation. We must •conceive the connection between the cause and the effect distinctly and in detail, and •see from a simple view of one of them that it *must* be followed or preceded by the other. This is the true manner of conceiving a particular power in a particular body; . . . and it is perfectly obvious that the human mind •can't do any such thing, that is, it• can't form an idea of two objects that will enable it to conceive any connection between them, or comprehend distinctly the power or efficacy by which they are united. Such a connection would amount to a demonstra-

tion, and would imply the absolute impossibility for the one object not to follow, or to be conceived not to follow on the other; and that kind of connection has already been rejected in all cases. If you disagree, and think you have acquired a notion of power in some particular object, please point out to me the object. Until someone does that—and nobody will!—I have to conclude that since we can never distinctly conceive how any •particular power can possibly reside in any particular object, we deceive ourselves in imagining we can form any such •general idea.

From all this we may infer that when we

•talk of any being, whether divine or creaturely, as having a 'power' or 'force' that is exactly right for some effect, or •speak of a 'necessary connection' between objects, and suppose that this connection depends on an 'efficacy' or 'energy' that some of these objects possess,

we really have no clear meaning for any of these expressions, and are merely using common words without any clear and determinate ideas. Perhaps the expressions never have meanings; but it is more probable that they do have proper meanings which they lose in these contexts through being wrongly used. So let us return to our subject, to see if we can discover the nature and origin of the ideas that we attach to the expressions •when we are using them properly•.

As we confront a particular cause-effect pair, we can't just by considering either or both of those objects •perceive the tie that unites them, or •say for sure that there is a connection between them. So it is not from any one instance that we arrive at the idea of cause and effect, of a necessary connection, of power, of force, of energy, of efficacy. •If all we

<sup>1</sup>Our ideas of God are similarly imperfect, but this can't have any effect on either religion or morals. The order of the universe proves that there is an omnipotent mind, that is, a mind whose will is *constantly accompanied by* the obedience of every creature and being. That's all that is needed as a basis for all the articles of religion; we don't need to form a distinct idea of God's force and energy.

ever saw were particular conjunctions of objects, each conjoined pair being entirely different from each of the others, we could never form any such ideas.

But when we observe numerous instances in which the same kinds of objects are conjoined, we immediately conceive a connection between them, and begin to draw an inference from one to another. So this multiplicity of resembling instances constitutes the *essence* of power or connection, and is the source from which the idea of it arises. To understand the idea of power, then, we must consider this multiplicity—and that is all I require for a solution of the difficulty we have been wrestling with. I reason thus: The repetition of perfectly similar instances can't on its own give rise to an original idea different from what is to be found in any particular instance; I have pointed this out already, and it obviously follows from my basic principle that all ideas are copied from impressions. But the idea of *power* is a new original idea that isn't to be found in any one instance, and yet it arises from the repetition of numerous instances; so it follows that the repetition doesn't have that effect *on its own*, but must either (1) reveal or (2) produce something new that is the source of that idea. . . . (1) But the repetition of similar objects in similar relations of succession and contiguity obviously doesn't reveal anything new in any one of them, since we can't draw any inference from it or make it a subject of either demonstrative or probable reasonings (as I proved in section 6). Indeed, even if we *could* draw an inference, it wouldn't make any difference in the present case. That is because no kind of reasoning can give rise to a new idea such as the idea of *power* is; when we reason we must *already* have clear ideas to serve as the objects of our reasoning. The conception always precedes the understanding; and where one is obscure the other is uncertain, where one fails the other must fail also.

(2) It is certain that this repetition of similar objects in similar situations produces nothing new in these objects or in any external body. For you will readily agree that the different instances we have of the conjunction of resembling causes and effects are in themselves entirely independent of one another, and that the passing on of motion that I see result from the present collision of two billiard balls is totally distinct from what I saw result from such a collision a year ago. These collisions have no influence on each other: they are entirely separated by time and place, and one of them could have existed and communicated motion even if the other had never occurred. So:

Nothing new is either revealed or produced in any objects by their constant conjunction, and by the uninterrupted resemblance of their relations of succession and contiguity. Yet it is from this resemblance that the ideas of *necessity*, of *power*, and of *efficacy* are derived. So these ideas don't represent anything that does or can belong to the objects that are constantly conjoined.

Look at this argument from any angle you like—you will find it to be perfectly unanswerable. Similar instances are the first source of our idea of power or necessity; but their similarity doesn't give them any influence on each other or on any external object. We must therefore look in some other direction to find the origin of that idea.

Though the numerous resembling instances that give rise to the idea of power have no influence on each other, and can never produce in the object any new quality that could be the model for that idea, our *observation of* this resemblance produces a new impression *in our mind*, and that is the idea's real model. For after we have observed the resemblance in a sufficient number of instances, we immediately feel a *determination* of the mind to pass from one

object to its usual attendant, and to conceive the latter in a stronger light on account of that determination. [Feeling a 'determination' to form a certain idea is just feeling oneself being *made* to form the idea. Most of Hume's uses of 'determine' etc. have been rendered here by 'make' etc., but in the present section 'determination' is allowed to stand.] This determination is the only effect of the resemblance, and so it must *be* the power or efficacy the idea of which is derived from the resemblance. The numerous instances of resembling conjunctions lead us into the notion of power and necessity. These instances are in themselves totally distinct from each other and have no union except in our mind, which observes them and collects their ideas. So necessity is the effect of *this observation*, and is nothing but an internal impression of the mind—a determination to carry our thoughts from one object to another. If we don't view it in this way we can never arrive at the most distant notion of it, or be able to attribute it either to external or internal objects, to spirit or body, to causes or effects.

•The necessary connection between causes and effects is the basis of our inference from one to the other. The basis of our inference is •the transition •in our minds• arising from the accustomed union. These, therefore, are the same: •the necessary connection between causes and effects *is* the move our mind makes from an impression of the cause to a lively idea of the effect, or perhaps it is not the move itself but rather our being *made or determined* to make the move•.

The idea of necessity arises from some impression. No impression conveyed by our •outer• senses can give rise to it. So it must be derived from some internal impression, some impression of reflection. The only internal impression that has anything to do with the present business is •the impression of• the propensity that custom produces in us to pass from an object to the idea of its usual attendant. This, therefore, is the essence of necessity. The bottom line is this:

necessity is something that exists in the mind, not in objects, and we can't ever form the remotest idea of it considered as a quality in bodies. Either we have no idea of necessity, or necessity is nothing but the determination of the thought to pass from causes to effects (and vice versa) according to their experienced union.

Thus, just as •the necessity that makes twice two equal four . . . lies only in •the act of the understanding by which we consider and compare these ideas, so also •the necessity or power that unites causes with effects lies in •the determination of the mind to pass from the one to the other. The efficacy or energy of causes doesn't belong to the causes themselves or to God or to the two together; it belongs entirely to the mind that considers the union of two or more objects in all past instances. It is here that the real *power* of causes is placed, along with their *connection* and *necessity*.

I am aware that this is the most violent of all the paradoxes that I have advanced or will advance in the course of this *Treatise*, and that only through solid proof and reasoning can I hope to get it accepted and to overcome the ingrained prejudices of mankind. Before people are reconciled to this doctrine, they will have *often* to repeat to themselves •the central line of argument•:

- The simple view of any two objects or actions, however they are related, can never give us any idea of power or of a connection between them.
- This idea arises from the repetition of their union.
- The repetition doesn't reveal anything or cause anything in the *objects*; its only influence is on the *mind*, through the customary transition that it produces.

Therefore:

- this customary transition is the same as the power and necessity, which are therefore qualities of perceptions rather than of objects, and are internally felt by

the soul rather than perceived externally in bodies. Any extraordinary claim is usually met with astonishment, which immediately changes into the highest degree of admiration or contempt, depending on whether we approve or disapprove of what is said. I am much afraid that although the above reasoning seems to me the shortest and most decisive imaginable, the bias of the mind will persist in the general run of readers, giving them a prejudice against the present doctrine.

This bias against it is easily accounted for. It is widely recognized that the mind has a great propensity to *spread itself* on external objects: when some objects cause internal impressions that always occur at the same time that the objects appear to the senses, the mind conjoins these impressions with the objects. For example, as certain sounds and smells are always found to accompany certain visible objects, we naturally imagine that the sounds and smells are in the objects, even being in the same place, though in fact the qualities are the wrong sorts of thing to be conjoined with objects, and really don't exist in any place. I shall return to this in 5<sub>iv</sub>. All I need say here is that this propensity ·that the mind has for spreading itself on external objects· is what makes us suppose necessity and power to lie in the objects we consider, not in our mind that considers them. . . .

But although this is the only reasonable account we can give of necessity, the contrary notion is so riveted in the mind by the forces I have mentioned that I am sure my views will be treated by many as extravagant and ridiculous.

What! the efficacy of causes lies in the determination of the mind? As if causes didn't operate entirely independently of the mind, and wouldn't continue their operation even if no minds existed to think about them or reason about them! •Thought may well depend on •causes for its operation, but •causes don't depend

on •thought. ·To suppose otherwise· is to reverse the order of Nature and give a secondary role to what is really primary. To every operation there is an appropriate power, which must belong to the body that operates. If we remove the power from one cause, we must ascribe it to another; but to remove it from all causes and bestow it on a being that relates to the cause and the effect only by perceiving them is a gross absurdity and contrary to the most certain principles of human reason.

All I can say in reply to these arguments is that they are like a blind man's claiming to find a great many absurdities in the supposition that the colour of scarlet is not the same as the sound of a trumpet, or that light is not the same as solidity! If we really have no idea of power or efficacy in any object, or of any real connection between causes and effects, it won't do much good to 'prove' that efficacy is necessary in all operations. People who say such things don't understand their own meanings, and ignorantly run together ideas that are entirely distinct from each other. I willingly allow that both material and immaterial objects may have various qualities of which we know nothing; and if we choose to call these 'power' or 'efficacy', that won't matter much to the world. But when we use the terms 'power' and 'efficacy' not as •meaning those unknown qualities, but rather as •signifying something of which we *do* have a clear idea, and which is incompatible with the objects to which we attribute it, obscurity and error begin to occur and we are led astray by a false philosophy. That is what happens when we transfer •the determination of the thought to •external objects and credit *them* with a real intelligible connection between them, this being ·an objectivised analogue of· a quality that can belong only to the observing mind.

As for the point that the operations of Nature are independent of our thought and reasoning, I agree; which is why I have remarked

- that objects have the relations of contiguity and succession to each other,
- that similar objects can be observed to have similar relations in many instances, and
- that all this is independent of the operations of the understanding.

But if we go beyond that and ascribe a *power* or *necessary connection* to these objects, we are ascribing something that we can never observe in them, and have to derive the idea of it from what we feel internally when we think about them. I carry this doctrine so far that I am ready to apply it to the causal claim involved in my present line of thought. I do that in the following paragraph.

When an object is presented to us, it immediately gives the mind a lively idea of the object that is usually found to accompany it, and this determination of the mind forms the necessary connection of these objects. But when we step back and attend not to the objects but to our perceptions of them, we still have a causal claim to consider, namely that the impression (of one object) is the cause and the lively idea (of another object) is the effect; and *their* necessary connection is the new determination that we feel to pass from the idea of the impression to the idea of the lively idea. The force that unites our internal perceptions is as unintelligible—as incapable of being seen as necessitating, just by hard thinking—as is the force that unites external objects, and is known to us only by experience. Now, I have already sufficiently examined and explained the nature and effects of experience: it never gives us any insight into the internal structure or operating force of objects, but only accustoms the mind to pass from an impression of one to a

lively idea of another.

It is now time to gather up all the parts of this reasoning, and assemble them into an exact definition of the relation of cause and effect, which is our present topic. This order of exposition—*first* examining our inference from the cause-effect relation and *then* explaining the relation itself—would have been inexcusable if it had been possible to proceed in any other way. But as the nature of the relation depends so much on that of the inference, I have had to advance in this seemingly preposterous manner, using certain terms before being able exactly to define them or fix their meaning. I shall now correct this fault by giving a precise definition of cause and effect.

There are two definitions we can give for this relation, which differ only in that they present different views of the same object; one makes us consider cause-effect as a philosophical relation (a mere comparison of two ideas), the other makes us consider it as a natural relation (an association between two ideas). [See note on page ??.] We can define a 'cause' to be

An object precedent and contiguous to another, and where all the objects resembling the former are similarly precedent and contiguous to objects that resemble the latter.

If you find this to be defective because in addition to the cause and the effect it brings in something extraneous (namely, other objects that resemble them), we can substitute this other definition in its place:

A cause is an object precedent and contiguous to another, and united with it in such a way that the idea of one determines the mind to form the idea of the other, and the impression of one to form a livelier idea of the other.

If you reject this too for the same reason—because in addi-

tion to the cause and the effect it brings something extraneous (namely our impressions and ideas of them)—I can only ask you to replace it by a better definition. I have to admit that I can't do that. [Hume then goes on to repeat his theory and his reasons for it, concluding:] However extraordinary my views about cause-effect may appear, I think it is useless to trouble myself with any further enquiry or reasoning on the subject, and shall now rely on them as on established maxims.

Before leaving this subject I shall draw some corollaries from my theory—ones that will enable us to remove four prejudices and popular errors that have held sway in philosophy. (1) We can learn from my doctrine that all causes are of the same kind, and that there is no basis for distinguishing •*making* causes from •*enabling* causes, or for sorting out causes according to whether they are

efficient,  
formal,  
material,  
exemplary, or  
final.

[The efficient cause of a coin is the stamping of a die on hot metal, its formal cause is its roundness etc., its material cause is the metal it is made of, and its final cause is the commercial end for which the coin was made. The notion of 'exemplary cause', employed by some mediaeval philosophers wishing to combine Plato with Christianity, can't be briefly explained here.] Our idea of efficiency or *making* is derived from the constant conjunction of two kinds of objects; when this is observed the cause is efficient; and where it is not, there is no cause of any kind. For the same reason we must deny that there is any essential difference between *cause* and *occasion*. If constant conjunction is implied in what we call 'occasion', it is a real cause. If not, it isn't a natural relation at all, and can't give rise to any argument or reason-

ing. [Some philosophers, notably Malebranche, held that created things cannot really act on one another, and that what happens in billiards (for example) is that God causes the cue-ball to move *on the occasion of* its being struck by the cue.]

(2) The same course of reasoning will make us conclude that just as there is only one kind of *cause*, so also there is only one kind of *necessity*, and that the common distinction between 'moral' and 'physical' necessity has no basis. This account I have given of necessity makes this clear. The constant conjunction of objects, along with the determination of the mind, constitutes *physical necessity*; and when these are absent what you have is *chance*. As objects must either be conjoined or not, and as the mind must either be determined or not determined to pass from one object to another, there can't be any middle case between chance and absolute necessity. You don't change the nature of the necessity by weakening this conjunction and determination. Even in the operation of bodies there are different degrees of constancy of going-together, and different degrees of force exerted on the mind in its movement from impression to idea, without producing different *kinds of causality*.

The distinction that is often made between having power and exercising it is equally baseless.

(3) Perhaps I can now fully overcome all the natural reluctance to accept my earlier arguments in which I tried to prove that *the necessity of a cause to every beginning of existence* has no demonstrative or intuitive support. That conclusion won't appear strange in the light of my definitions. If we define a 'cause' to be

An object precedent and contiguous to another, and where all the objects resembling the former are similarly precedent and contiguous to objects that resemble the latter,

we can easily grasp that there is no absolute or metaphys-

ical necessity that every beginning of existence should be preceded by such an object. And if we define a 'cause' to be

An object precedent and contiguous to another, and united with it in the imagination in such a way that the idea of one determines the mind to form the idea of the other, and the impression of one to form a livelier idea of the other,

we shall have even less difficulty in assenting to my opinion. Such an influence on the mind—so far from being something we can be sure *must go with every beginning of existence*—is in itself perfectly extraordinary and incomprehensible, and it is only from experience and observation that we are certain that it ever occurs.

(4) We can never have reason to believe in the existence of something of which we can't form an idea. All our reasonings about existence are derived from causation, so they are derived from the experienced conjunction of objects and not from any exercise of pure thinking. So the same experience that grounds our causal reasoning must give us a notion of these objects whose existence we reason to; so there can't be any mystery in our conclusions—that is, we can't soundly argue for the existence of an I-know-not-what of which we don't have an idea. . . .

### Section 15: Rules by which to judge of causes and effects

According to my doctrine, there are no objects which we can, by merely surveying them and without consulting experience, discover to be the causes of anything else; and no objects that we can certainly discover in the same manner *not* to be the causes of specified other things. **Anything can produce anything.** Creation, annihilation, motion, reason,

volition—all these can arise from one another, or from any other object we can imagine. You won't find this strange if you hold in your mind together two principles that I have explained: •that the constant conjunction of objects determines their causation, and •that strictly speaking no objects are contrary to each other but existence and non-existence (see i.5). Where objects are not contrary, nothing hinders them from having the constant conjunction on which the relation of cause and effect totally depends.

Since it is thus *possible* for any object to be a cause or effect of any other, it may be proper to fix some general rules by which we can know when the cause-effect really *does* obtain. I shall offer eight such rules.

1. The cause and effect must be contiguous in space and time.

2. The cause must be prior to the effect.

3. There must be a constant union between the cause and effect. This is what chiefly constitutes the cause-effect relation.

4. The same cause always produces the same effect, and the same effect always comes from the same cause. We derive this principle from experience. And it's the source of most of our philosophical reasonings. For when by any clear experience we have discovered the causes or effects of any phenomenon, we immediately extend our observation to every phenomenon of the same kind, without waiting for the constant repetition from which the idea of the cause-effect relation was originally derived.

5. (This rule depends on rule 4.) Where several different objects produce the same effect, it must be by means of some quality that we find to be common to them all. For as like effects imply like causes, we must always ascribe the causation to the respect in which the causes are alike.

6. (Another rule stemming from 4.) The difference in the effects of two similar objects must come from a respect in which the objects are not alike. For as like causes always produce like effects, when in any instance we find that this seems not to hold we must conclude that this irregularity proceeds from some ·not-yet-discovered· difference between the causes.

7. When an object increases or diminishes with the increase or diminution of its cause, it is to be regarded as a compounded effect, derived from the union of different effects arising from different parts of the cause. The absence (or presence) of one part of the cause is here supposed to be always followed by the absence (or presence) of a corresponding part of the effect. This constant conjunction sufficiently proves that one part is the cause of the other. But we must not rashly draw such a conclusion from a few instances. A certain degree of heat gives pleasure; if you reduce the heat, the pleasure lessens; but it doesn't follow that if you raise the heat beyond a certain degree the pleasure will increase correspondingly; for we find that ·on the contrary· it degenerates into pain.

8. An object which exists for any time in its full perfection without any effect is not the sole cause of that effect, but needs to be assisted by some other force that can forward its influence and operation. For as like effects necessarily follow from like causes, and in a contiguous time and place, their separation for a moment shows that these causes are not complete ones.

Those eight rules contain all the logic that I think proper to use in my reasoning; and perhaps even they weren't much needed: the logic they contain might have been supplied by the natural workings of our understanding. Our Aristotelian intellectuals and logicians don't exhibit so much superiority over ordinary folk in their reason and ability that I want to

imitate them by delivering a long system of rules and precepts to direct our judgment in philosophy! All the rules of this sort are very easy to discover, but extremely difficult to apply; and even empirical science, which seems the most natural and simple of all, requires the utmost stretch of human judgment. Every phenomenon in Nature is compounded and modified in so many details that in order to arrive at the decisive point we must carefully separate whatever is superfluous and investigate through new experiments whether every detail of the first experiment was essential to it. These new experiments are open to critical examination of the same kind; so that we need the utmost constancy to persevere in our enquiry, and the utmost skill to choose the right way among so many that present themselves. If this is the case even in •physical science, how much more in •the sciences of human nature, where there is a much greater complication of details, and where the beliefs and feelings that are essential to any action of the mind are so unconscious and obscure that they often escape our strictest attention, and are not only unaccountable in their causes but not even known to exist! I greatly fear that the small success I meet with in my enquiries will make this remark sound like an apology rather than—what it really is—a boast! If anything can give me confidence that I am proceeding on the right lines, it will be the widening of my range of empirical data as much as possible; so it may be proper at this point to examine the reasoning faculty of non- human animals as well as that of human creatures.

### Section 16: The reason of animals

It is ridiculous to deny an obvious truth, and almost as ridiculous to take much trouble to defend one; and no truth appears to me more obvious than that *beasts are endowed with thought and reason as well as men*. The evidence for this is so obvious that it never escapes the most stupid and ignorant.

We are conscious that we ourselves, in adapting means to ends, are guided by reason and design, and that we don't ignorantly or casually perform the actions that tend to self-preservation, and to getting pleasure and avoiding pain. So when we see other creatures in millions of instances perform •similar actions directed to •similar ends, all our principles of reason and probability carry us with an irresistible force to believe in the existence of a •similar cause. I don't think I need to illustrate this argument with particular examples; the smallest attention ·to the non-human part of the animal kingdom· will supply us with more than enough. The resemblance between the actions of animals and those of men is so complete in this respect that the first action of the first animal we happen to choose will provide us with incontestable evidence for the present doctrine.

This doctrine is as useful as it is obvious, and furnishes us with a kind of touchstone by which to test every theory in this area of philosophy. The resemblance of the •external actions of animals to our own actions leads us to judge that their •internal actions also resemble ours; and that same line of reasoning, carried one step further, will make us conclude that since *their* internal actions resemble *ours*, the causes must also be alike. So when any hypothesis is advanced to explain a mental operation that is common to men and beasts, we must apply the same hypothesis to both; and just as every true hypothesis will survive this test, I venture to

say that no false one will do so. In the systems that philosophers have employed to account for the actions of the mind, the common defect has been that they presuppose so much subtlety and refinement of thought that the thought they describe is out of reach not only of mere animals but even of children and common people in our own species, although they are capable of the same emotions and affections as people of the most accomplished genius and understanding. Such •subtle complexity is a clear proof of the falsehood ·of a theory of mind·, just as •simplicity is proof of its truth.

Let us, therefore, put our present system about the nature of the understanding to this decisive trial, and see whether it will equally account for the reasonings of beasts as for these of the human species.

I need to distinguish •the actions of animals that are of a down-to-earth kind and seem to be on a level with their common capacities from •those more extraordinary instances of wisdom that they sometimes display in the interests of their own preservation and the propagation of their species. A dog that avoids fire and precipices, that shuns strangers and caresses his master, gives us an instance of the •first kind. A bird that chooses with such care and precision the place and materials of her nest, and sits on her eggs for an appropriate time in a suitable season, . . . . provides us with a lively instance of the •second.

As to actions of the former kind, I assert that they come from a reasoning that is not different—in itself or in the forces behind it—from what appears in human nature. It is necessary in the first place that there be some impression immediately present to their memory or senses, to be the basis for their judgment. From the tone of voice the dog infers his master's anger and foresees his own punishment. From a certain sensation affecting his smell he judges that his prey is not far away.

The inference he draws from the present impression is built on experience, and on his observation of the conjunction of objects in past instances. As you vary this experience, he varies his reasoning. Make a beating follow on one sign or motion for some time, and afterwards on another; and he will successively draw different conclusions in line with his most recent experience.

Now, let any philosopher try to explain the act of the mind we call 'belief', giving an account of its causes *without* bringing in the influence of custom on the imagination, and let his hypothesis be equally applicable to beasts as to the human species; when he has done this, I promise to accept the result! But at the same time I demand that if my system is the only one that can do this, it should in fairness be accepted as entirely satisfactory and convincing. That it is the only one is evident almost without any reasoning.

- Beasts certainly never perceive any real connection among objects. So
- it is by experience that they infer one from another.
- They can't by any argument reach the general conclusion that objects of which they have had no experience resemble those of which they have. So
- it is through custom alone that experience operates

on them.

All this was obvious enough with respect to man. When applied to beasts there can't be the least suspicion of mistake; which must be admitted to be a strong confirmation, or rather an invincible proof, of my system.

The force of habit in reconciling us to a phenomenon shows nowhere more strikingly than in this: men are not astonished at the operations of their own reason, yet they wonder at the instinct of animals, and find it hard to explain because it can't be traced back to the very same sources as their own reason. To consider the matter rightly, reason itself is nothing but a wonderful and unintelligible instinct in our souls, which carries us along a certain sequence of ideas and endows them with particular qualities according to their particular situations and relations. This instinct, admittedly, arises from past observation and experience; but can anyone give the ultimate reason why •past experience and observation produce such an effect, any more than why •Nature alone should produce it? Nature can certainly produce *without* help from habit anything that can arise *from* habit; indeed, habit is merely one of the forces of Nature, getting all its power from Nature.