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## TREATISE OF HUMAN NATURE

By David Hume

### Book I: The understanding

#### Part iii: Knowledge and probability

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### Section 1<sub>iii</sub>: Knowledge

There are (as I said in section 5,) seven different kinds of philosophical relation:

resemblance,  
 identity,  
 relations of time and place,  
 proportion in quantity or number,  
 degrees in any quality,  
 contrariety,  
 causation.

These relations can be divided into two classes. In one class are the ones that depend entirely on the ideas that we compare together, so that the relation can change only if the ideas change. In the other class are relations that can be changed without any change in the ideas. The idea of a triangle shows us the relation of *equality* that its three angles have to two right angles, and this relation is invariable as long as our idea remains the same. On the other side, the relations of *contiguity* and *distance* between two objects can be changed merely by moving the objects, without any change *in* them or in their ideas; and how things move depends on a hundred different events that can't be foreseen by the mind. Similarly with *identity*: two objects can be numerically different from each other - that is, can really be *two* - even though they perfectly resemble each other, and even if they appear at different times in the very same place. And with *causation*: the power by which one object produces another can never be discovered merely from the ideas of the objects; so it is evident that cause and effect are relations that we learn about from experience and not from any abstract reasoning or reflection. Not even the simplest phenomenon can be explained purely in terms of the qualities of the objects as they appear to us, or be foreseen by us without the help of our memory and experience.

It seems, then, that of these seven philosophical relations there remain only four that can be the objects of knowledge and certainty because they depend solely on ideas, . These four are *resemblance*, *contrariety*, *degrees in quality*, and *proportions in quantity or number*. Three of these relations are discoverable at first sight, and belong in the province of intuition rather than of demonstration. [In Hume's day, 'intuition' stood for 'seeing something, straight off, as self-evidently true'; while 'demonstration' is the procedure of proving something by rigorously valid argument, *each step in which* is warranted by intuition.] When two objects *resemble* each other, the resemblance will immediately strike the eye, or rather the mind, and seldom needs a second look. Similarly with *contrariety*: no-one can doubt for a moment that existence and non-existence destroy each other and are perfectly incompatible and contrary. And with the *degrees of any quality*: although it is impossible to judge exactly concerning degrees of a quality - such as colour, taste, heat, cold - when the difference between them is very small, it is easy to decide which is the more intense when their difference is considerable. And we pronounce this decision at first sight, without any enquiry or reasoning.

We can proceed in the same way in fixing the proportions of quantities or numbers: where the difference is very great and remarkable, we can see at a glance which figure or number is the larger of two. As to equality or any exact proportion - that is, any judgment about *exactly* how much larger one item is than another - a single look will yield us only a guess, except with very small numbers or very limited portions of extension, which can be

taken in all at once and where we perceive that we can't fall into any considerable error. In all other cases we must settle for approximations, or else proceed in a more artificial manner.

I have already observed, near the middle of 4<sub>ii</sub>, that geometry, or the technique by which we fix the proportions of figures, never achieves perfect precision and exactness (though its results are much more general and exact than the loose judgments of the senses and imagination). Its first principles are drawn from the general appearance of the objects, and when we know something of the prodigious minuteness of which Nature is susceptible we can't feel secure about general appearances! Our ideas seem to give us a perfect assurance that no two straight lines can have a common segment; but if you attend to the ideas that we have when we think this you'll find that they always suppose the two lines to be inclining *perceptibly* towards one another, so that the angle between them is fairly large. When the angle they form is extremely small we have no standard of *straight line* precise enough to assure us of the truth of this proposition. It is the same with most of the primary decisions [Hume's phrase] of mathematics.

There remain, therefore, algebra and arithmetic as the only sciences in which we can carry on a chain of reasoning to any degree of intricacy while preserving perfect exactness and certainty. We have a precise standard by which to judge concerning the equality and proportion of numbers; and on the basis of that standard we can determine the relations between numbers without any possibility of error. When two numbers are brought together so that each always has a unit answering to every unit of the other, we pronounce them 'equal'. The reason why geometry doesn't quite qualify as a perfect and infallible science is that it doesn't have a comparable standard of equality in extension.

But it may be as well here to remove a difficulty that could arise from my asserting that, though geometry falls short of the perfect precision and certainty that arithmetic and algebra have, it still excels the imperfect judgments of our senses and imagination. The reason why I attribute *any* defect to geometry is that its first basic principles are derived merely from appearances; and you might think that this defect must follow it all the way through, preventing it from ever being able to compare objects or ideas more exactly than we can by relying purely on our eye or imagination. I accept that this defect follows it far enough to prevent it from ever aspiring to full exactness or certainty: but since its basic principles depend on the easiest and least deceitful appearances, they give to their consequences a degree of exactness that the consequences couldn't have if they were taken singly. It is impossible to *see by looking* that the angles of a thousand-sided figure are equal to 1996 right angles, or to guess at anything remotely like this result; but when the eye determines that straight lines cannot coincide, and that we can't draw more than one straight line between two given points, its mistakes can never be of any consequence. And this is the nature and use of geometry, to take us back to appearances which, because of their simplicity, can't lead us into any considerable error.

I shall take this opportunity to offer a second observation about our demonstrative reasonings. . . . It is usual with mathematicians to claim that the ideas that are *their* objects are so refined and spiritual that they can't be conceived in the imagination but must be comprehended by a pure and intellectual view of which only the higher faculties of the soul are capable. The same notion runs through most parts of philosophy, and is principally made use of to explain our abstract ideas, and to show how we can form an

idea of a triangle, for instance, which is to be neither isosceles nor scalar, nor confined to any particular length or proportion of sides. It is easy to see why philosophers are so fond of this notion of 'spiritual and refined' perceptions, since it helps them to cover up many of their absurdities, and lets them refuse to submit to the decisions of clear ideas by appealing to ideas that are obscure and uncertain though 'spiritual and refined'! To destroy this trick we need only to reflect on the principle I have stressed so often, that *all our ideas are copied from our impressions*. From that we can immediately conclude that since all impressions are clear and precise, the ideas that are copied from them must be clear and precise too, so that it's our own fault if they ever contain anything dark and intricate. An idea is by its very nature weaker and fainter than an impression; but being in every other respect the same, it can't bring with it any very great mystery. If its weakness makes it obscure, it is our business to remedy that defect as much as possible by keeping the idea steady and precise; and till we have done *that* it's pointless for us to engage in reasoning and philosophy.

### Section 2<sub>iii</sub>: Probability, and the idea of cause and effect

I think that's all I need to say about those four relations that are the foundation of science; but there is more to be said in detail about the other three - the ones that don't depend on the ideas, and can be absent or present even while the ideas remain the same. These three relations are *identity*, *situations in time and place*, and *causation*.

All kinds of reasoning consist in nothing but a comparison, and a discovery of the relations - constant or changing - that two or more objects have to one another. [In Hume's time, 'comparing' two things could be simply *bringing them together in a single thought*, not necessarily a thought about their being alike. The present section seems to use the word sometimes in that broader, weaker sense of 'compare' and sometimes in the narrower sense that is common today.] We can make such a comparison when both the objects are present to the senses, or when neither is present, or when only one is. When both the objects are present to the senses along with the relation that holds between them, we call this 'perception' rather than 'reasoning': in this case there is no exercise of thought, no action properly so-called, but only a passive allowing in of the impressions through the organs of sensation. According to this way of thinking, we ought not to classify as 'reasoning' any observations we make about identity or relations of time and place; for in none of those does the mind go beyond what is immediately present to the senses, whether to discover the real existence of other objects or to discover the relations between them. Only *causation* produces a connection that can assure us, on the basis of the existence or action of one object, that some other existence or action followed or preceded it. And the other two relations - identity, and location in time and space - can be used in reasoning only so the extent that they affect or are affected by causation. There is nothing in any objects to persuade us that they are either always distant or always close; and when from experience and observation we discover that their spatial relation doesn't change, we always conclude that some secret cause is separating or uniting them. The same reasoning extends to identity. We readily suppose that an object can continue individually the same - that is, can continue to be that very same object - even if in our perception of it comes and goes; we attribute to it an *identity*, despite the interruption of the perception, as long as we conclude that if we *had* kept our eye or hand constantly on it

it *would* have given us an invariable and uninterrupted perception. But this conclusion about what *would* have happened goes beyond the impressions of our senses and has to be based on the connection of cause and effect; and we need cause and effect if we are to be sure that the object has not been switched on us, however much the new object may resemble the one that formerly appeared to the senses. Whenever we discover such a perfect resemblance, we consider whether it is common in that *kind* of object; whether possibly or probably any cause could be at work producing the switch and the resemblance; and our judgment about the identity of the object is based on the answers to these questions concerning causes and effects.

So we find that of the three relations that don't depend purely on the ideas, the only one that can be traced beyond our senses, and that informs us of existences and objects that we don't see or feel, is *causation*. So I shall try to explain this relation fully before we leave the subject of the understanding. This explanation will occupy most of the remainder of Part iii of this work.

To begin in an orderly fashion, we must consider the idea of causation and see from what origin it is derived. It is impossible to reason soundly without understanding perfectly the idea about which we reason; and it is impossible to understand an idea perfectly without tracing it back to its origin and examining the primary impression from which it arises. The examination of the impression gives clearness to the idea, and the examination of the idea gives a similar clearness to all our reasoning.

Take any pair of objects that we call *cause* and *effect*, and turn them on all sides in order to find the impression that produces this prodigiously important idea. I see straight off that I mustn't search for it in any of the particular qualities of the objects: whichever of these qualities I pick on, I find some object that *doesn't* have it and yet *does* fall under the label of 'cause' or 'effect'. And indeed everything that exists, whether externally or internally, can be considered as either a 'cause' or an 'effect', though it is plain that no one *quality* universally belongs to all beings and gives them a title to that label.

So the idea of causation, since it doesn't come from any *quality*, must be derived from some *relation* among objects; and that relation is what we must now try to discover.

**The first thing** I find is that only *contiguous* pairs of objects are considered as cause-effect related, and that nothing can operate at a time or in a place other than - even if extremely close to - the time and place that it exists in. It sometimes seems that one object acts on another that is at a distance from it, but they are commonly found on examination to be linked by a chain of causes, with each link contiguous to the next, and the end links contiguous to the distant objects; and in any particular case where we can't discover such a chain we still presume it to exist. So we can take it that contiguity is essential to causation; at least we can suppose it to be so, according to the general opinion, until we can find a better occasion - in iv.5 - to clear up this matter by examining what objects are and what are not capable of being brought together and conjoined.

**The second relation** that I shall claim to be essential to causes and effects is not so universally acknowledged as contiguity, being a subject of some controversy. It is the relation of the cause's *priority in time* to the effect. Some claim that it is not absolutely necessary for a cause to precede its effect, and that any object or action can in the very first moment of its existence exert its productive quality, giving rise to another object or action that is absolutely simultaneous with it. But experience in most instances seems to

contradict this opinion, and anyway we can may establish the essentialness of the relation of priority by a kind of inference or reasoning, as follows. It is an established maxim, both in physics and the human sciences, that

an object  $O_1$  that exists for some time in its complete state without producing another object  $O_2$  is not the sole cause of  $O_2$  when it *does* occur, but is assisted by some other factor that pushes  $O_1$  from its state of inactivity and makes it exert the energy which it secretly possessed.

Now if any cause could be absolutely simultaneous with its effect, it is certain, according to this maxim, that all causes must be simultaneous with their effects; for any one of them that holds back its operation for a single moment doesn't exert itself at the very time at which it might have operated, and so it is not the whole cause of the effect. The consequence of this would be nothing less than the destruction of the succession of causes that we observe in the world - indeed, the utter annihilation of time. For if one cause were simultaneous with its effect, and this effect with its effect, and so on, there would plainly be no such thing as succession, and all objects would be coexistent.

If you find this argument satisfactory, good! If not, I ask you to allow me the same liberty that I took in the preceding case, of *supposing* it to be satisfactory. You will find that the affair is of no great importance.

Having thus discovered or supposed the two relations of *contiguity* and *succession* to be essential to causes and effects, I find myself stopped short: this is as far as I can go if I attend only to single instances of cause and effect. When bodies collide, we think that the motion in one causes motion in the other; but when we consider these objects with the utmost attention, we find only that one body *comes up to* the other, and that the former's motion *precedes* the latter's, though without any interval that we can perceive. It does no good for us to rack ourselves with further thought and reflection on this individual case: we have said all we can about it.

You might want to stop looking at particular cases and define 'cause' as 'something that is productive of something else'; but this doesn't say anything. For what would you mean by 'production'? Could you define it except in terms of causation? If you can, please produce the definition. If you can't, you are here going in a circle, producing merely *one synonymous term* instead of a *definition*.

Shall we then rest contented with *contiguity* and *succession* as providing a complete idea of causation? By no means! One object can be contiguous and prior to another without being thought to be its cause. There is also a *necessary connection* to be taken into account, and that relation is much more important than either of the others.

So I return to the particular case - for example, the collision - and look at it from all angles trying to discover the nature of this necessary connection by finding the impression(s) from which the idea of it could be derived. When I cast my eye on the known qualities of objects I immediately find that the relation of cause and effect doesn't depend in the least on them. When I consider the relations between them I can find only contiguity and succession, which I have already regarded as imperfect and unsatisfactory. Should I despair of success, and accept that what I have here is an idea that is not preceded by any similar impression? That would be strong evidence of light-mindedness and instability, given that the contrary principle has already been so firmly established as to admit of no further doubt - at least until we have more fully examined the present difficulty.

So we must proceed like someone who, having searched for something and not found it where he expected, beats about all the neighbouring fields with no definite view or plan, hoping that sheer good luck will eventually guide him to what they he is looking for. We have to leave the direct survey of this question about the nature of the necessary connection that enters into our idea of cause and effect (·returning to it at the start of section 14·), and try instead to find some other questions the answering of which may afford a hint on how to clear up the present difficulty. I shall examine two such questions [the second question is considerably expanded from Hume's formulation of it]:

What is our reason for holding it to be necessary that everything whose existence has a beginning also has a cause?

Why do we conclude that causes of kind  $K_1$  must necessarily have effects of kind  $K_2$ , and what is going on when from the occurrence of a  $K_1$  we infer that a  $K_2$  will occur, and how does it happen that we believe the predictions generated by such inferences?

Before going further, I should remark that although the ideas of cause and effect are derived from impressions of reflection as well as of sensation, for brevity's sake I usually mention only the latter as the origin of these ideas. Whenever I say anything about impressions of sensation, please take it to be said about impressions of reflection as well. Passions are connected with their objects and with one another just as much as external bodies are connected together. So the same relation of cause and effect that belongs in the external world belongs in the mind as well.

### Section 3<sub>iii</sub>: Why a cause is always necessary

To begin with the first question, about the necessity of a cause ·of coming into existence·: It is a general maxim in philosophy that whatever begins to exist must be caused to do so. This is commonly taken for granted in all reasonings, without any proof being given or asked for. It is supposed to be based on *intuition*, and to be one of those ·immediately self-evident· maxims that men can't really doubt in their hearts, even if they deny them with their lips. But if we examine this maxim in terms of the idea of knowledge that I have explained, we shan't discover in it any mark of any such intuitive certainty. Quite the contrary: we'll find that it is of a nature quite foreign to what can be known intuitively.

All certainty arises from the comparison of ideas, and from the discovery of such relations as don't change so long as the ideas don't change. These relations are *resemblance, proportions in quantity and number, degrees of any quality, and contrariety*, none of which is involved in the proposition *Whatever has a beginning has also a cause of existence*. So that proposition is not intuitively certain. At any rate, if you want to maintain that it *is* intuitively certain you must deny that these four are the only infallible relations, and must find some *other* infallible relation to be involved in the proposition we are examining. When you do that, we can look at it!

Anyway, here is an argument that proves at one blow that our proposition is not intuitively *or demonstrably* certain. To demonstrate that ·there must be a cause for every new coming-into-existence and for every alteration of something already in existence, we would have to show that ·it is entirely impossible for anything to begin to exist without some productive force ·making it do so·; so if ·the latter proposition can't be proved, we have no hope of ever being able to prove ·the former. And the latter proposition *is* utterly

incapable of demonstrative proof, as we can assure ourselves by considering that all *distinct* ideas are separable from each other, and as the ideas of a given cause and of its effect are evidently *distinct*, we can easily conceive an object coming into existence without bringing in the *distinct* idea of a cause or productive principle. So the separation of the idea of a *cause* from that of a *beginning of existence* is plainly possible for the imagination; and consequently the actual separation of these items is possible to the extent that it doesn't imply any contradiction or absurdity; and so it can't be refuted by any reasoning from mere ideas, without which it is impossible to demonstrate the necessity of a cause.

Accordingly, when we look into the demonstrations that have been adduced to show the necessity of a cause we shall find them all to be fallacious and sophistical. I shall show this with respect to the three main ones.

Some philosophers (including Mr Hobbes) argue like this: all the points of time and place in which we can suppose any object to come into existence are in themselves equal; and unless there is some cause that is special to one time and to one place, and by that means determines and fixes the coming-into-existence, the 'Where?' question must remain eternally unanswered, and the object can't come into existence because there is nothing to fix where and when it will do so. But I ask: Is it any harder to suppose *the time and place* to be fixed without a cause than to suppose the *coming into existence of the object* to be determined without a cause? The first question that comes up on this subject is always *Will the object come into existence or not?*, and the second is *When and where will it come into existence?* If the removal of a cause is intuitively absurd in the one case, it must be so in the other; and if the absurdity isn't clear without a proof in the one case, it will equally require a proof in the other. So it can't be that the absurdity of one supposition proves the absurdity of the other; for they are both on the same footing and must stand or fall by the same reasoning.

The second argument that I find used on this topic (by Dr Clarke and others) is beset by an equal difficulty. It goes like this:

Everything must have a cause; for if anything lacked a cause it would produce itself, i.e. exist before it existed, which is impossible.

But this reasoning is plainly invalid, because it assumes that something's lacking any cause involves it *having* a cause, namely itself. No doubt the notion of a thing's bringing itself into existence is an evident contradiction. But to say that something comes into existence without a cause is not to say that it is itself its own cause! On the contrary, in excluding all external causes the statement excludes the thing itself that comes into existence. An object that exists absolutely without any cause is certainly not its own cause; and when you assert that the one follows from the other you are taking for granted the very point that is in question . . . .

Exactly the same trouble infects the third argument that has been used by Mr Locke to demonstrate the necessity of a cause:

Whatever is produced without any cause is *produced by nothing*, i.e. has nothing for its cause. But *nothing* can never be a cause, any more than it can be something, or be equal to two right angles. By the same intuition that we perceive that nothing is not equal to two right angles, and that nothing is not something, we perceive that nothing can never be a cause; and this forces us to see that every object has a real cause of its existence.

I don't think I need employ many words in showing the weakness of this argument, after what I have said of the other two. All three of them are based on the same fallacy, and are derived from the same turn of thought. I need only to point out that when we exclude all causes we really do exclude them: we don't suppose that *nothing* or *the object itself* causes of the object to come into existence; so we can't argue from the absurdity of those suppositions to the absurdity excluding all causes. . . .

Even more frivolously, some say that every effect must have a cause because having-a-cause it is implied in the very idea of *effect*. It is true that every effect must have a cause, because 'effect' is a relative term of which 'cause' is the correlative. But this doesn't prove that everything real must be preceded by a cause, any more than it follows from 'Every husband must have a wife' that every man must be married. The right question to be asking is: Must every item that begins to exist owe its existence to a cause? I hope that by the foregoing arguments I have shown well enough that the answer Yes is neither intuitively nor demonstratively certain.

So the opinion of the necessity of a cause for every new production isn't based on *a priori* knowledge or scientific reasoning, and must therefore arise from observation and experience. The natural next question is: *how* does it arise from experience? But I shall postpone that for a while, because I find it more convenient to sink this question in two others:

Why do we conclude that such-and-such particular causes must necessarily have such-and-such particular effects?

Why do we form an inference from cause to effect?

It may turn out eventually that a single answer will serve for both questions.

#### **Section 4<sub>iii</sub>: The component parts of our reasonings about cause and effect**

Although the mind in its reasonings from causes or effects carries its view beyond the objects that it sees or remembers, it must never lose sight of them entirely; it mustn't reason merely on its own ideas, without some mixture of impressions (or at least of ideas of the memory, which are equivalent to impressions). When we infer effects from causes, we must establish the existence of the causes; which we have only two ways of doing. We can do it either by an immediate perception of our memory or senses, or by an inference from other causes; but then we must ascertain the existence of *these* in the same way, either by a present impression or memory or by an inference from *their* causes, and so on backwards until we arrive at some object that we see or remember. We can't carry on our inferences ad infinitum; and the only thing that can stop them is an impression of the memory or senses. Beyond that there is no room for doubt or enquiry.

For an example, choose any point of history, and consider why we either believe or reject it. Thus, we believe that *Caesar was killed in the senate-house on the ides of March*, because this is established on the unanimous testimony of historians, who agree in assigning this precise time and place to that event. Here are certain words that we see or remember, words that we remember to have been used as the signs of certain ideas; and these ideas - the ones in the minds of writers of the history books - were those of people who were immediately present at assassination and received their ideas directly from it, or they got their ideas from the testimony of others, who relied on yet earlier testimony,

and so on backwards until the slope stops at those who saw the assassination. It is obvious that all this chain of argument or connection of causes and effects is initially based on words that are seen or remembered, and that without the authority of either the memory or senses our whole reasoning would be chimerical and without foundation: every link of the chain would hang on another; but there would be nothing fixed to one end of it that could support the whole chain, and so there would be no belief. And this is actually the case with all hypothetical arguments, or reasonings from a supposition, for in them there is no present impression and no belief about a matter of fact.

You may want to object: 'We can reason from our past conclusions or principles without having recourse to the impressions from which they first arose.' This is true, but not a sound objection; for even if those impressions *were* entirely wiped from the memory, the belief they produced may still remain. All reasonings about causes and effects *are* originally derived from some impression; just as one's confidence in a demonstration always comes from a comparison of ideas, though the confidence may continue after the comparison has been forgotten.

### **Section 5<sub>iii</sub>: The impressions of the senses and memory**

In this kind of reasoning from causation, then, we use materials that are of a mixed and heterogeneous nature: however inter-connected they are, they are still essentially different from each other. All our arguments about causes and effects consist of  $\dot{Y}$ an impression of the memory or senses, and of  $\dot{Y}$ the idea of the real object or event that  $\cdot$ we think $\cdot$  caused or was caused by the object of the impression. So we have here three things to explain:  $\dot{Y}$ the original impression,  $\dot{Y}$ the transition  $\cdot$ from that  $\cdot$  to the idea of the connected cause or effect, and  $\dot{Y}$ the nature and qualities of that idea.

As for the impressions that arise from the senses: in my opinion their ultimate cause is utterly inexplicable by human reason; we will never be able to decide with certainty whether  $\dot{Y}$ they arise immediately from the object, or  $\dot{Y}$ are produced by the creative power of the mind, or  $\dot{Y}$ are caused by God. But this question doesn't affect our present purpose. We can draw inferences from the coherence of our perceptions, whether they are true or false, whether they represent Nature justly or are mere illusions of the senses.

When we search for the feature that distinguishes memory from imagination, we see straight off that it can't lie in the simple ideas it presents to us; for both these faculties borrow their simple ideas from  $\dot{Y}$ impressions, and can't ever get beyond  $\dot{Y}$ those original perceptions. Nor are memory and imagination distinguished from one another by the arrangement of their complex ideas. It is indeed a special property of the memory to preserve the original order and position of its ideas -  $\cdot$ or, more strictly speaking, to preserve its ideas in the order of the original corresponding impressions $\cdot$  - whereas the imagination transposes and changes its ideas as it pleases. But this difference is not sufficient to tell us whether in any given case we have memory or imagination; for it is impossible to *bring back* the past impressions in order to compare them with our present ideas and see whether the arrangements are exactly alike. So the memory is not known by  $\dot{Y}$ the order of its complex ideas or  $\dot{Y}$ the nature of its simple ones; so the difference between it and imagination must lie in  $\dot{Y}$ memory's greater force and vivacity. You can indulge your fancy by *imagining* a past scene of adventures; and you couldn't distinguish this from a

*memory* of those events if it weren't that the ideas of the imagination are fainter and more obscure.

It often happens that when two men have been involved in a course of events, one remembers it much better than the other and has great trouble getting his companion to recollect it. He recites various details - the time, the place, who was there, what they said, what they did - all with no result, until finally he hits on some lucky circumstance that revives the whole affair and gives his friend a perfect memory of everything. Here the person who forgets receives all his ideas of the event at first from what his friend says; he has the right ideas of the circumstances of time and place and so on, though to him they are mere fictions of the imagination. But as soon as the detail is mentioned that triggers his memory, those very same ideas now appear in a new light, and in a way *feel* different from how they did before. Without altering in any way except in how they feel, they become immediately ideas not of imagination but of memory, and are assented to.

Since the imagination can represent all the same objects that the memory can offer to us, and since those two faculties are distinguished only by how the ideas they present *feel*, we ought to consider what the nature is of that feeling. I think everyone will readily agree with me that the ideas of the memory are *more strong and lively* than those of the imagination.

A painter wanting to represent a passion or emotion of some kind would try to get a sight of a person in the grip of that emotion, in order to enliven his ideas of it and give them a force and vivacity superior to what is found in ideas that are mere fictions of the imagination. The more recent this memory is, the clearer is the idea; and when after a long time he wants to think again about that passion he always finds his idea of it to be much decayed if not wholly obliterated. We are frequently in doubt about ideas of the memory when they become very weak and feeble; and can't decide whether an image comes from the imagination or from the memory when it is not drawn in colours that are lively enough to point certainly to the latter faculty. . . .

As an idea of the memory can by losing its force and vivacity degenerate so far that it is taken to be an idea of the imagination, so on the other hand an idea of the imagination can acquire such force and vivacity that it passes for an idea of the memory and has a counterfeit effect on belief and judgment. We see this in liars who by frequently repeating their lies eventually come to believe them, 'remembering' them as realities. In this case, as in many others, custom and habit have the same influence on the mind as Nature does, and implant the idea with the same force and vigour.

It appears, then, that the belief or assent that always accompanies the memory and senses is nothing but the vivacity of the perceptions they present, and that this is all that distinguishes them from the imagination. In such cases, *believing* is *feeling an immediate impression of the senses* or a repetition of that impression in memory. Simply *the force and liveliness of the perception* is what constitutes the basic act of judgment, laying the foundation for the reasoning that we build on it when we track the relation of cause and effect.

### **Section 6<sub>iii</sub>: The inference from the impression to the idea**

It is easy to see that when we think our way along this relation, the inference we make from cause to effect is *not* based merely on probing these particular objects and learning

enough about their inner natures to see why one depends on the other. If we consider these objects in themselves and never look beyond the ideas we form of them, we shall find that none of them implies the existence of anything else. Such an inference - based purely on the ideas - would amount to *knowledge*, and would imply the absolute contradiction and impossibility of conceiving anything different, that is, of conceiving the predicted effect *not* to follow. But clearly there can't be any impossibility of that kind, because all distinct ideas are separable. Whenever we pass inferentially from a present impression to the idea of some other object, we *could* have separated the idea from the impression and have substituted any other idea in place of it.

So it is purely by experience that we can infer the existence of one object from that of another. The experience goes like this. We remember having had frequent instances of the existence of one sort of object, and also remember that individuals of another sort have always gone along with them, regularly occurring just after them and very close by. Thus we remember seeing the sort of object we call 'flame' and feeling the sort of sensation that we call 'heat'. We recall also their constant conjunction in all past instances - always flame-then-heat. Without more ado we call the one 'cause' and the other 'effect', and infer the existence of the heat from that of the flame. In all the instances from which we learn the conjunction of particular causes and effects, both the causes and effects have been perceived by the senses and are remembered; but whenever we reason about them, only one is perceived or remembered, and the other is supplied on the basis of our past experience.

Thus, in moving on through our topic we have come unawares upon a new relation between cause and effect - finding this when we least expected it and were entirely employed on another subject. This relation is the *constant conjunction* of cause with effect. *Contiguity* and *succession* are not sufficient to make us regard two objects as cause and effect unless we see that these two relations are preserved in a number of instances. Now we can see the advantage of leaving the direct survey of the cause-effect relation in order to discover the nature of the *necessary connection* that is such an essential part of it. Perhaps by this means we may at last arrive at our goal! But, to tell the truth, this newly discovered relation of *constant conjunction* doesn't seem to take us far along our way. Here is an expansion of that pessimistic thought:

The fact of constant conjunction implies only that similar objects have always been placed in similar relations of contiguity and succession; and it seems evident that *this* can't reveal any new idea; it can make our ideas more numerous, but can't make them richer. What we don't learn from one object we can't learn from a hundred that are all of the same kind and are perfectly alike in every detail. Our senses show us in one instance two bodies (or motions or qualities) in certain relations of succession and contiguity, and our memory presents us with a multitude of cases where we have found similar bodies (or motions or qualities) related in the same ways. The mere repetition of a past impression - even to infinity - won't give rise any new original idea such as that of a necessary connection; and the sheer *number* of impressions has in this case no more effect than if we confined ourselves to one only.

But although this reasoning seems sound and obvious, it would be folly for us to despair too soon. So I shall continue the thread of my discourse: having found that after the

discovery of the constant conjunction of any objects we always draw an inference from one object to another, I shall now examine *the nature of that inference*, and of the transition from the impression to the idea. Perhaps we shall eventually find that the necessary connection depends on the inference rather than the inference's depending on the necessary connection!

It appears that the transition from an impression that is present to the memory or senses (and said to be of a 'cause') to the idea of an object (which is said to be an 'effect') is founded on past experience, and on our memory of their constant conjunction. So the next question is: *how* does experience produce the idea of the effect? Is it done by the understanding or by the imagination? Are we caused to make the transition by our reason or by some non-reasoned association and relation of perceptions? I shall start with the former suggestion, giving it about a couple of pages.

If reason did the work, it would have to be relying on the principle that

**Instances of which we *haven't* had experience must resemble those of which we *have*; the course of Nature continues always uniformly the same.**

In order to clear this matter up, therefore, let us consider all the arguments that might be given to support such a proposition. They will have to be based either on absolutely certain knowledge or on probability; so let us look into each of these degrees of certainty, to see whether either provides us with a sound conclusion along these lines.

My previous line of reasoning will easily convince us that no demonstrative arguments could prove that instances of which we have had no experience resemble those of which we have had experience. We can at least *conceive* a change in the course of Nature; which proves that such a change is not absolutely impossible. To form a clear idea of anything is an undeniable argument for its possibility, and can all on its own refute any claimed demonstration against it.

Probability doesn't concern the relations of ideas as such, but rather the relations among objects; so it must be based in some way on the impressions of our memory and senses, and in some way on our ideas. If our probable reasonings didn't have any impressions mixed into them, their conclusions would be entirely chimerical: and if there were there no ideas in mixture, the action of the mind in observing the relation - that is, in taking in that such-and-such makes so-and-so *probable* - would strictly speaking be sensation, not reasoning. In all probable reasonings, therefore, there is something present to the mind that is either seen or remembered, and from this we infer something connected with it that is not seen nor remembered.

The only connection or relation of objects that can lead us beyond the immediate impressions of our memory and senses is that of cause and effect, because it is the only one on which we can base a sound inference from one object to another. The idea of cause and effect is derived from experience, which informs us that certain specific kinds of objects have always been constantly conjoined with each other; and as an object of one of these kinds is supposed to be immediately present through an impression of it, we on that basis expect there to be an object of the other kind. According to this account of things - which I think is entirely unquestionable - probability is based on the presumption that the objects of which we have had experience resemble those of which we have had none; so this presumption can't possibly *arise from* probability. The same principle can't be both the cause and effect of another. This may be the only proposition about the causal relation that is either intuitively or demonstratively certain!

You may think you can elude this argument. You may want to claim that all conclusions from causes and effects are built on solid reasoning, saying this without going into the question of whether our reasoning on this subject is derived from demonstration or from probability. Well, please produce this reasoning so that we can examine it. You may say that after experience of the constant conjunction of certain kinds of objects we reason as follows:

This kind of object is always found to produce an object of that kind. It couldn't have this effect if it weren't endowed with a power of production. The power necessarily implies the effect; and therefore there is a valid basis for drawing a conclusion from the existence of one object to the existence of another. The past production implies a power; the power implies a new production; and the new production is what we infer from the power and the past production.

It would be easy for me to show the weakness of this reasoning if I were willing to appeal to the observations I have already made, that the idea of *production* is the same as the idea of *causation*, and that no existence certainly and demonstratively implies a power in any other object; or if it were proper to bring in here things I shall have occasion to say later about the idea we form of power and efficacy. But these approaches might seem to weaken my system by resting one part of it on another, or to create confusion in my reasoning by taking things out of order; so I shall try to maintain my present thesis without any such help.

Let it be temporarily granted, then, that the production of one object by another in any one instance implies a power, and that this power is *connected* with its effect. But it has already been proved that the power doesn't lie in the perceptible qualities of the cause, yet all we have present to us are its perceptible qualities. So I ask: why, in other instances where those qualities have appeared, do you presume that the same power is also there? Your appeal to past experience gives you no help with this. The most it can prove is that *that very object* which produced a certain other object was *at that very instant* endowed with a power to do this; but it can't prove that the same power must continue in the same object (collection of perceptible qualities) at other times, much less that a similar power is always conjoined with similar perceptible qualities in *other* objects. You might say: 'We have experience that the same power continues through time to be united with the same object, and that similar objects are endowed with similar powers'; but then I renew my question about why from this experience we form any conclusion that goes beyond the past instances of which we have had experience. If you answer this in the same way that you did the previous question, your answer will raise a new question of the same kind, and so on ad infinitum; which clearly proves that this line of reasoning had no solid foundation.

Thus, not only does your reason fail to reveal to us the ultimate connection of causes and effects, but even after experience has informed us of their constant conjunction we can't through your reason satisfy ourselves concerning why we should extend that experience beyond the particular instances that we have observed. We suppose, but can never prove, that objects of which we have had experience must resemble the ones that lie beyond the reach of our discovery.

I have called attention to certain relations that make us pass from one object to another even when no *reason* leads us to make that transition; and we can accept as a general rule that *wherever the mind constantly and uniformly makes a transition without*

*any reason, it is influenced by these relations.* That is exactly what we have in the present case. Reason can never show us a connection of one object with another, even with the help of experience and the observation of the objects' constant conjunction in all past instances. So when the mind passes from the idea or impression of one object to the idea of or belief in another, it isn't driven by reason but by certain forces that link the ideas of these objects and unite them in our imagination. If among  $\dot{Y}$ ideas in the  $\dot{Y}$ imagination there were no more unity than the  $\dot{Y}$ understanding can find among  $\dot{Y}$ objects, we could never draw any inference from causes to effects, or believe in any matter of fact. The inference, therefore, depends solely on the ·unreasoned· union of ideas.

The principles of union among ideas come down to three general ones, I maintain, and I have said that the idea or impression of any object naturally introduces the idea of any other object that is  $\dot{Y}$ resembling,  $\dot{Y}$ contiguous to, or  $\dot{Y}$ connected with it. These are neither the infallible nor the sole causes of union among ideas. They are not infallible causes, because someone may fix his attention for a while on one object, without looking further. They are not the sole causes, because ·some of our transitions from impressions to ideas owe nothing to these three relations·: our thought has a very irregular motion in running along its objects, and can leap from the heavens to the earth, from one end of the creation to the other, without any certain method or order. But though I concede this weakness in these three relations (·not infallible·), and this irregularity in the imagination (·not the sole causes·), I still contend that the only *general* factors that associate ideas are  $\dot{Y}$ resemblance,  $\dot{Y}$ contiguity, and  $\dot{Y}$ causation.

Ideas are indeed subject to a uniting force that may at first sight seem different from any of these, but will be found ultimately to depend on the same origin. When every individual of some kind of objects is found by experience to be constantly united with an individual of another kind, the appearance of any new individual of either kind naturally conveys our thought to its usual attendant. Thus, because a particular idea is commonly attached to a particular word, nothing is required but the hearing of that word to produce the corresponding idea; and this transition will be one which it is hardly possible for the mind to prevent, however hard it tries. In this case it is not absolutely necessary that on hearing the sound we should reflect on past experience and consider what idea has usually been connected with the sound. The imagination, unaided, takes the place of this reflection; it is so accustomed to pass from the word to the idea that it doesn't delay for a moment between hearing the word and conceiving the idea.

But though I acknowledge this to be a true principle of association among ideas, I contend that it is the very same as that between the ideas of cause and effect, and is an essential part of all our causal reasonings. The only notion of cause and effect that we have is that of *certain objects that have been always conjoined together, and in all past instances have been found inseparable.* We can't penetrate into the reason for that conjunction. We only observe the fact itself: from constant conjunction, objects acquire a union in the imagination. When the impression of one becomes present to us, we immediately form an idea of whatever usually accompanies it; and consequently we can lay this down as one part of the definition of *opinion* or *belief*, that it is *an idea related to or associated with a present impression.*

Thus, though causation is a  $\dot{Y}$ philosophical relation - because it involves contiguity, succession, and constant conjunction - it is only in its role as a  $\dot{Y}$ natural relation that it

produces a union among our ideas and enables us to reason on it and draw inferences from it.

### Section 7<sub>iii</sub>: The nature of the idea or belief

The *idea* of an object is an essential *part* of the *belief* in it - the belief that it exists - but not the *whole*. We *conceive* many things that we don't *believe*. Let us now investigate more fully the nature of belief, or the qualities of the ideas that we assent to.

Obviously, all reasonings from causes or effects end in conclusions about matters of fact - that is, about the existence of objects or of their qualities. It is also obvious that the *idea* of existence is not different from the *idea* of any object, and that when after *simply* conceiving something we want to *conceive* it as existent, this actually doesn't add to or alter anything in the first idea. For example, when we affirm that *God is existent* we simply form the idea of such a Being as he is represented to us, and the existence we attribute to him is *not* conceived by a particular idea which we join to the idea of his other qualities and could again separate and distinguish from them. But I go further than this. I say not only that *the* conception of the existence of an object adds nothing to *the* simple conception of it, but also that *the* belief in its the existence doesn't add any new ideas either. When I *think* of God, when I *think* of him as existent, and when I *believe* him to be existent, my idea of him neither grows nor shrinks. Still, there is certainly a great difference between a simple conception of the existence of an object and a belief in it; as this difference doesn't consist in the parts or structure of the relevant idea, it follows that it must consist in *how* we conceive it.

Suppose that someone in conversation says things to which I don't assent - that Caesar died in his bed, that silver is more fusible than lead, that mercury is heavier than gold. It is obvious that despite my incredulity I clearly understand his meaning, and form all the same ideas as he does. My imagination has the same powers as his: he can't conceive any idea that I can't conceive, or conjoin any ideas that I can't conjoin. So I ask: what makes the difference between believing a proposition and disbelieving it? The answer is easy with regard to *propositions* that are proved by intuition or demonstration. In that case, the person who assents not only conceives the ideas according to the proposition but is forced - either immediately or by the interposition of other ideas - to conceive them in just that way. Whatever is absurd is unintelligible, and the imagination *cannot* conceive anything contrary to a demonstration. But in *reasonings* from causation, and about matters of fact, this sort of necessity isn't present, and the imagination is *free* to conceive both sides of the question; so I ask again, what makes the difference between incredulity and belief? . . .

Here is a bad answer:

A person who doesn't assent to a proposition that you advance first conceives the object in the same way as you, and then immediately goes on to conceive it in a different way and to have different ideas of it; and this different conception is his disbelief.

This answer is unsatisfactory - not because it contains any falsehood but because it doesn't reveal the whole truth. Whenever we dissent from what someone says, we do indeed conceive both sides of the question, and that is the truth in the 'bad answer'; but we can *believe* only one side, so it evidently follows that *belief* must make some difference

between the conception to which we assent and the one from which we dissent. We may mingle, unite, separate, run together, and vary our ideas in a hundred different ways; but until there appears some principle that fixes one of these different combinations as the one we believe, we have in reality no opinion. And this principle, as it plainly adds nothing to our previous ideas, can only change *how* we conceive them.

All the perceptions of the mind are of two kinds, impressions and ideas, which differ from each other only in their different degrees of force and vivacity. Our ideas are copied from our impressions and represent them in every detail. When you want somehow to vary your idea of a *particular object*, all you can do is to increase or decrease its force and vivacity. If you change it in any other way it will come to represent a *different object* or impression. (Similarly with colours. A particular shade of a colour may acquire a new degree of liveliness or brightness without any other variation; but if you produce any other change it is no longer the same shade or colour.) Therefore, as belief merely affects *how* we conceive any object, all it can do - the only kind of variation that won't change the subject, so to speak - is to give our ideas additional force and vivacity. So an opinion or belief can most accurately be defined as: *a lively idea related to or associated with a present impression*.<sup>1</sup>

Here are the main points of the arguments that lead us to this conclusion. When we infer the existence of one object from the existence of others, some object must always be present either to the memory or senses to serve as the foundation of our reasoning (the alternative being a regress ad infinitum). Reason can never satisfy us that the existence of any one object ever implies the existence of another; so when we pass from an impression of one to an idea of or belief in another, we are driven not by reason but by custom, or an

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<sup>1</sup> I take this opportunity to comment on a very remarkable error which, being frequently taught in the schools [= 'Aristotelian philosophy departments'], has become a kind of established maxim and is accepted by all logicians. This error consists in the division of the acts of the understanding into conception, judgment, and reasoning, and in the definitions given of them. Conception is defined as the simple survey of one or more ideas, judgment as the separating or uniting of different ideas, and reasoning as the separating or uniting of different ideas by the interposition of others which show how they are related to one another. But these distinctions and definitions are seriously faulty. (1) It is far from being true that in every judgment that we form we unite two different ideas. In the proposition *God is* - or indeed any other proposition about existence - the idea of *existence* is not a distinct idea that we unite with that of the thing that is said to exist, forming a compound idea by the union. (2) Just as we can thus form a proposition containing only one idea - as the idea of God is the only idea in the proposition *God exists* - so we can exercise our reason employing only two ideas, not bringing in a third to serve as an intermediary between them. We infer a cause *immediately* from its effect; and this inference is not only a true example of reasoning, but is the strongest of all, and is more convincing than when we interpose another idea to connect the two extremes.

What we can in general affirm regarding these three acts of the understanding is that properly understood they all come down to the first of the three, and are nothing but particular ways of conceiving our objects. Whether we consider a single object or several, whether we dwell on these objects or run from them to others, and in whatever form or order we survey them, the act of the mind doesn't go beyond a simple conception, and the only remarkable difference that sometimes occurs is when we join *belief* to the conception and are convinced of the truth of what we conceive. Belief is an act of the mind that has never yet been explained by any philosopher; so I am at liberty to propose my hypothesis about it, which is that belief is only a strong and steady conception of an idea - one that approaches in some degree to an immediate impression.

associative force. But belief is something more than a simple idea. It is a particular manner of forming an idea; and as an idea can be varied - without being turned into *another* idea - only by a variation of its degree of force and vivacity, it follows from all this that belief is a lively idea produced by a relation to a present impression, which is the definition I gave.

This operation of the mind that forms the belief in any matter of fact seems to have been until now one of the greatest mysteries of philosophy, though no-one has so much as suspected that there was any difficulty in explaining it. For my part, I have to admit that I find a considerable difficulty in this, and that even when I think I understand the subject perfectly I am at a loss for words in which to express my meaning. A line of thought that seems to me to be very cogent leads me to conclude that an *Opinion* or belief is nothing but an idea that differs from a *Fiction* not in the nature or the order of its parts but in how it is conceived. But when I want to explain this 'how', I can hardly find any word that fully serves the purpose, and am obliged to appeal to the reader's *feeling* in order to give him a perfect notion of this operation of the mind. An *Idea* assented to *feels* different from a *Fictitious* idea that the imagination alone presents to us; and I try to explain this different feeling by calling it 'a superior force', or 'vivacity', or 'solidity', or 'firmness', or 'steadiness'. This variety of terms, which may seem so unphilosophical, is intended only to express the act of the mind that makes realities more *present* to us than fictions, causes them to *weigh more* in thought, and gives them a *superior influence* on the passions and the imagination. Provided we agree about the thing, we needn't argue about the labels. . . . I admit that it is impossible to explain perfectly this feeling or manner of conception that marks off belief. We can use words that express something near it. But its true and proper name is 'belief', which is a term that everyone sufficiently understands *in* common life. And *in* philosophy we can go no further than to say that it is something felt by the mind which distinguishes the ideas of *the judgment* from the fictions of *the imagination*. It gives them more force and influence, makes them appear of greater importance, anchors them in the mind, and makes them the governing forces of all our actions.

This definition will also be found to fit perfectly with everyone's feeling and experience. Nothing is more obvious than that the ideas to which we assent are more strong, firm, and vivid, than the loose dreams of a castle-builder. If one person sits down to read a book as a romance, and another as a true history, they plainly receive the same ideas in the same order; and they attach the very same sense to what their author writes, despite the incredulity of one and the belief of the other. His words produce the same ideas in both, but his testimony doesn't have the same influence on them. The believing reader has a more lively conception of all the incidents. He enters deeper into the concerns of the persons; he represents to himself their actions and characters, their friendships and enmities; he even goes so far as to form a notion of their features and manners. While the disbelieving reader, who gives no credit to the testimony of the author, has a more faint and languid conception of all these particulars, and can't be much entertained by it unless he is held by the style and ingenuity of the composition.

### Section 8<sub>iii</sub>: The causes of belief

Having thus explained the nature of belief, and shown that it consists in a lively idea related to a present impression, I now enquire into what forces produce belief - that is, what gives the idea its vivacity.

I would like to have it established as a general maxim in the science of human nature that when an impression becomes present to us it not only carries the mind to such ideas as are related to it but also passes on to those ideas a share of its force and vivacity. All the operations of the mind depend to a large extent on its state at the time when it performs them; and the action will always have more or less vigour and vivacity according to whether the energy-level is high or low and the attention more or less fixed. So when an object is presented which elevates and enlivens the thought, every action the mind performs will be stronger and more vivid as long as that state continues. Now, it is obvious that how long the state continues depends entirely on what the mind is thinking about, and that any *new* object of thought naturally draws the energies in a new direction and changes the mind's state; while on the other hand when the mind fixes constantly on the same object, or passes easily along related objects without being aware that they are different, the state lasts much longer. So it comes about that when the mind is enlivened by a present impression it proceeds to form a more lively idea of the related objects, by a natural transition of the state - the level of liveliness - from one to the other. The change of the objects is so easy that the mind is hardly aware of it, and applies itself to the conception of the related idea with all the force and vivacity it acquired from the present impression.

If we could satisfy ourselves that I am right about this just by considering what it is for things to be naturally related, and the ease of transition that is essential to this, that would be good. But I have to say my confidence in my account comes mainly from experience. As the first experience that is relevant to our topic, I note that when we see a picture of an absent friend our idea of him is plainly enlivened by the resemblance of the picture to the friend, and that every passion that the idea of our friend gives us - whether of joy or of sorrow - acquires new force and vigour because we see the picture. This effect comes from the joint operation of a relation and a present impression. The relation: if the picture isn't at all like the friend, or at least wasn't intended to be a picture of him, it doesn't so much as carry our thought to him. And the present impression: if the picture is absent as well as the friend, the mind may pass from the thought of the picture to that of the friend, but in this case it feels its idea of the friend to be weakened rather than enlivened by that transition. We enjoy *seeing* a picture of our friend when it is set before us; but when the picture is removed, we prefer thinking about him *directly* to thinking about him as reflected in a picture which is as distant and dark to us as he is.

The ceremonies of the Roman Catholic religion may be considered as events of this sort. The devotees of that strange superstition usually plead, in excuse of the weird rituals they are scolded for, that they feel the good effect of those external movements, postures, and actions, in enlivening their devotion and their fervour, which would decay if they were directed entirely to distant and immaterial objects. They say:

We represent the objects of our faith, they say, in perceptible symbols and images, and make them more *present* to us by the immediate presence of these symbols than we could make them merely by an intellectual view and contemplation. Perceptible objects always have a greater influence on the imagination than anything else, and they readily pass this influence along to the ideas to which the objects are related and which they resemble.

I shall only infer from these practices and this defence of them that the effect of resemblance in enlivening the idea is very common; and as in every case a resemblance and a present impression must work together we are abundantly supplied with phenomena to prove the reality of the ·idea-enlivening· force of which I have spoken.

We may reinforce these phenomena by ·bringing in· others of a different kind, noting the effects of *contiguity* as well as of *resemblance*. Distance certainly lessens the intensity of every idea; and when we are getting near to an object, even though it isn't yet present to our senses, it operates on our mind with an influence that imitates ·that of· an immediate impression. *Thinking* about an object readily carries the mind to things that are contiguous to it; but only the object's actual *presence* carries the mind ·to an idea of contiguous objects· with a superior vivacity. ·Here is an example of what happens where there isn't a relevant present impression·. When I am a few miles from home, whatever relates to it touches me more nearly than when I am six hundred miles away, though even at that distance reflecting on anything in the neighbourhood of my friends and family naturally produces an idea of them. But as in this latter case both the relevant objects of the mind are *ideas*, the easy transition between them can't give a heightened vivacity to any of them, because there is no immediate *impression* at work.

No-one can doubt that  $\dot{Y}$ causation has the same influence as do  $\dot{Y}$ resemblance and  $\dot{Y}$ contiguity. Superstitious people are fond of the relics of saints and holy men, for the same reason that they want symbols and images, in order to enliven their devotion and give them a stronger and more intimate conception of the exemplary lives they want to imitate. It is clear that one of the best relics a devotee could get would be something made by the saint ·and thus causally related to him·; and if his clothes and furniture are ever considered as especially desirable in the same way, that is because they were once at his disposal and were moved and affected by him, which makes them partial effects of the saint, and connected with him by a shorter chain of consequences than any of the ones from which we learn that he really existed. This phenomenon clearly proves that a present impression with a relation of causation can enliven any idea, and consequently produce belief or assent; which fits my definition of 'belief'.

But we needn't look out *other* arguments to prove that a present impression with a relation or transition of the imagination can enliven an idea, because this very example - our reasonings from cause and effect - suffice for that purpose all on its own! Here are three certainties:

$\dot{Y}$ We must have an idea of every matter of fact which we believe.

$\dot{Y}$ This idea arises only from a relation to a present impression.

$\dot{Y}$ The belief adds nothing to the idea, but only changes how we conceive it, making it stronger and livelier.

The present conclusion about the influence of ·a natural· relation follows immediately from these steps, and every step appears to me sure and infallible. All that this operation of the mind contains is:  $\dot{Y}$ a present impression,  $\dot{Y}$ a lively idea, and  $\dot{Y}$ a relation or association in the imagination between the two. ·The situation is so transparently simple that· there can be no suspicion of a mistake.

. . . It is the present impression that is to be considered as the true cause of the idea, and of the belief that comes with it. So we should consult our experience in order to learn what special qualities the impression has that enable it to produce such an extraordinary effect.

First kind of experience: the present impression doesn't have this effect through its own power and efficacy, considered alone as a single perception and limited to the present moment. I find that an impression from which I can draw no conclusion when it first appears can later become a basis for a belief, after I have had experience of its usual consequences. For such a transition to occur, we must in every case have observed the same sort of impression in past instances, and have found that there is some other sort of impression with which it is constantly conjoined. This is confirmed by such a multitude of events that there can't be the slightest doubt about it.

From a second kind of experience I conclude that the belief that comes with the present impression, and is produced by a number of past impressions and pairs of events, arises *immediately*, without any new operation of the reason or imagination. I can be sure of this, because I never am conscious of any such operation in myself and don't find anything in the situation to operate *on*. When something comes from a past repetition without any new reasoning or conclusion, our word for it is 'custom'; so we can take it as certainly established every belief that follows on a present impression is derived solely from custom. When we are *accustomed* to see two impressions conjoined, the appearance or idea of one immediately carries us to the idea of the other.

Being fully satisfied about this, I make a third appeal to experience in order to learn whether the production of this phenomenon of *belief* needs anything more, in addition to the customary transition. So I change the first impression into an idea; and then I note that though the customary transition to the correlative idea still remains, there isn't any real belief or conviction. So a present impression is absolutely required for this whole operation; and when I go on to compare an impression with an idea, and find that they differ *only* in their degrees of force and vivacity, I reach the bottom-line conclusion that belief is a more vivid and intense conception of an idea, coming from its relation to a present impression.

Thus, all probable reasoning is nothing but a kind of sensation. We must follow our taste and sentiment not only in poetry and music but also in philosophy. When I am convinced of some principle, it is only an idea that strikes me more strongly. When I prefer one set of arguments to another set, I do nothing but decide from my feeling concerning the superiority of their influence [the second clause of that sentence is in Hume's exact words]. Objects have no discoverable connection with one another, and the only factor that lets us draw any inference from the appearance of one object to the existence of another is *custom* operating on the imagination

It is worth noting that the past experience on which all our judgments about cause and effect depend can operate on our mind so imperceptibly that we don't notice it, and it may even be that we don't fully know it. A person who stops short in his journey when he comes to a river in his way foresees the consequences of going forward; and his knowledge of these consequences comes from past experience which informs him of certain linkages of causes and effects. But does he *reflect on* any past experience, and *call to mind* instances that he has seen or heard of, in order to discover how water effects animal bodies? Surely not! *That* isn't how he proceeds in his reasoning. In his mind the idea of water is so closely connected with that of sinking, and the idea of sinking is so closely linked with that of drowning, that his mind moves from one idea to the next to the next without help from his memory. . . . But as this transition comes from experience and

not from any primary connection between the ideas, we have to acknowledge that experience can produce a belief - a judgment regarding causes and effects - by a secret operation in which it is not once thought of. This removes any pretext that may remain for asserting that the mind is convinced *by reasoning* of the principle that instances of which we haven't had experience *must* resemble those of which we have. For we here find that the understanding or imagination can draw inferences from past experience without so much as reflecting on it - let alone forming a principle about it and reasoning on the basis of the principle!

In general we may observe that in all the most established and uniform conjunctions of causes and effects - gravity, impact, solidity, etc. - the mind never consciously reflects on any past experience; though in cause-effect linkages that are more rare and unusual the mind may engage in such reflections as an aid to the custom and transition of ideas. Indeed, in some cases the reflection produces the belief without the custom; or - more accurately - the reflection produces the belief by producing the custom in an oblique and artificial manner. Let me explain. It is certain that not only in philosophy and science, but even in common life, we can come to know of a particular cause by *a single experiment*, provided it is judiciously made with a careful removal of all extraneous and irrelevant circumstances. . . . A habit can't be acquired from a single instance, so it may be thought that belief in this case can't be the effect of custom. But this difficulty will vanish if we consider that, though we are here supposed to have had only *one* experience of a particular effect, we have *millions* to convince us of this principle:

Like objects placed in like circumstances will always produce like effects. And as this principle has established itself by a sufficient custom, it makes convincing and firm any opinion to which it can be applied. The connection of the ideas is not habitual after one experiment; but this connection is covered by another principle that *is* habitual; which brings us back to my hypothesis. In *all* cases we transfer our experience to instances of which we have no experience, doing this consciously or implicitly, directly or indirectly.

I mustn't leave this subject without remarking that it is very difficult to talk perfectly properly and accurately about the operations of the mind, because common language has seldom made any very fine distinctions amongst them, generally calling by the same word all that *nearly* resemble each other. And as this is almost inevitably a source of obscurity and confusion in an author, so it may often give rise to doubts and objections in the reader, ones that he otherwise would never have dreamed of. Thus, my general position that

An opinion or belief is nothing but a strong and lively idea derived from a present impression related to it  
 may be liable to the following objection, because of a little ambiguity in the words 'strong' and 'lively':

It is not only an impression that can give rise to reasoning - an idea can have the same influence, especially given your principle that all our ideas are derived from corresponding impressions. If I now form an idea whose corresponding impression I have forgotten, I can still conclude from the existence of this idea that *such an impression did once exist*; and this conclusion comes as a belief; so what is the source of the qualities of force and vivacity that constitute this belief?

I am ready with an answer:  $\dot{Y}$ it comes from the present idea. This idea is not here considered as  $\dot{Y}$ the representation of an absent object but as  $\dot{Y}$ a real perception in the mind, of which we are intimately conscious; so it must be able to bestow on whatever is related to it the same quality (call it 'firmness', or 'solidity', or 'force', or 'vivacity') with which the mind reflects on it and is assured of its present existence. The idea here takes the place of an impression, and so far as our present purpose goes it is entirely the same.

For the same reason, we needn't be surprised to hear of the *memory* of an idea - that is, the *idea of* an idea - and of *its* having more force and vivacity than the loose conceptions of the imagination. In thinking of our past thoughts we don't just sketch out the objects of which we were thinking; we also conceive the action of our mind in doing this - that certain *je-ne-sais-quoi* of which it is impossible to give any definition or description but which everyone understands well enough. When the memory offers an idea of this, and represents it as past, it is easy to see how that idea could have more vigour and firmness than the idea that occurs when we *think* of a past thought without having any *memory* of it. . . .

### Section 9<sub>iii</sub>: The effects of other relations and other habits

However convincing those arguments may appear, I mustn't rest contented with them, but must turn the subject on every side in order to find new points of view from which I can illustrate and confirm these extraordinary and fundamental principles. Philosophers are *right* when they conscientiously hesitate to accept a new hypothesis; their attitude is necessary for progress towards the truth, and should be respected. So I must produce every argument that may tend to their satisfaction, and remove every objection that may stop them in their reasoning.

I have often remarked that in addition to  $\dot{Y}$ cause and effect the two relations of  $\dot{Y}$ resemblance and  $\dot{Y}$ contiguity are associating forces of thought, capable of conveying the imagination from one idea to another. I have also noted that when two objects are linked by either of these relations, and one of the objects is immediately present to the memory or senses, the mind is not only  $\dot{Y}$ carried to the linked object by means of the associating force, but  $\dot{Y}$ conceives that object with an additional force and vigour through the combined operation of the associating force and the present impression. In pointing all this out I was confirming *by analogy* my account of our judgments about cause and effect. But this very argument might be turned against me, becoming an objection to my hypothesis rather than a confirmation of it. The objection goes like this:

If all the parts of your hypothesis are true, namely:

$\dot{Y}$ these three kinds of relation are derived from the same principles,

$\dot{Y}$ their effects in giving force and vivacity to our ideas are the same, and

$\dot{Y}$ belief is nothing but a more forceful and vivacious conception of an idea,

it should follow that *belief* can come not only from the relation of  $\dot{Y}$ cause and effect, but also from those of  $\dot{Y}$ contiguity and  $\dot{Y}$ resemblance. But we find by experience that belief arises only from causation, and that we can draw no inference from one object to another unless they are connected by *this* relation. So we can conclude that there is some error in the reasoning that has led us into such difficulties.

That is the objection; now let us consider its solution. It is obvious that whatever is present to the memory, striking on the mind with a vivacity that resembles that of an immediate impression, must have a considerable effect on all the operations of the mind, easily distinguishing itself from mere fictions of the imagination. Of these impressions or ideas of the memory we form a kind of *system*, incorporating into it whatever we remember having been present to our internal perception or our external senses; and whenever some particular item in that system is joined to a present impressions, we choose to call it 'a reality'. But the mind doesn't stop at that. Finding that this system of perceptions is connected by custom - or, if you like, by the relation of cause and effect - with another system, it proceeds to consider the ideas of items in the latter system. It feels itself to be somehow forced to view these particular ideas, and finds that the custom or relation which does the forcing can't be changed in the slightest; so it forms them - this second set of ideas - into a new system, which it likewise dignifies with the title of 'realities'. The former of these two systems is the object of the memory and senses, the latter of the judgment.

This latter principle is what populates and furnishes the world, acquainting us with things that are too remote in time or space for our senses or memory to reach them. [Hume goes on to describe his beliefs about the history of Rome. Then:] These and all my other beliefs are nothing but *ideas*, though by their force and settled order, arising from custom and the relation of cause and effect, they distinguish themselves from ideas that are merely the offspring of the imagination.

As to the influence of contiguity and resemblance, we may observe that if the contiguous and resembling object is included in this system of realities, there is no doubt that these two relations *will* assist that of cause and effect, and fix the related idea with more force into the imagination. . . .

But though I can't entirely exclude the relations of resemblance and contiguity from operating on the imagination in this way, it is observable that when they occur on their own their influence is very feeble and uncertain. The cause-effect relation is needed to persuade us of any real existence, and its persuasion is also needed to give power to these other relations. Here is why. Take a case where the appearance of an impression leads us not only to feign another object but quite arbitrarily to give the latter a particular relation to the impression: this can't have any great effect on the mind, and there is no reason why if the same impression returns we should be led to place the same object in the same relation to it. [The word 'feign' comes from a Latin word that is also the source for 'fiction'. Hume is talking about fictions, inventions, stories we tell ourselves.] It is in no way necessary for the mind to feign any resembling or contiguous objects; and if it *does* feign them it needn't always do it in the same way. Indeed, such a fiction is based on so little reason that nothing but pure whim can lead the mind to form it; and *whim* being fluctuating and uncertain, it can't possibly operate with any considerable degree of force and constancy. . . .

The relation of cause and effect has all the opposite advantages. The objects it presents are fixed and unalterable. The impressions of memory never change in any considerable degree; and each impression draws along with it a precise idea, which takes its place in the imagination as something solid and real, certain and invariable. The thought is always made to pass from the impression to the idea - and from that particular impression to that particular idea - without any choice or hesitation.

Not content with removing this objection, however, I shall try to extract from it an argument *for* my doctrine. Contiguity and resemblance have much less effect than does causation; but they still have some effect, and strengthen the confidence of any opinion and the vivacity of any conception. If I can show this with various new examples in addition to the ones I have already noted, you will grant that that will be a considerable further argument that belief is nothing but a lively idea related to a present impression.

To begin with contiguity: it has been remarked that Moslem pilgrims who have seen Mecca, and Christians who have seen the Holy Land, are from then on more faithful and zealous believers than those who haven't had that advantage. A man whose memory presents him with a lively image of the Red Sea, the desert, Jerusalem, and Galilee can never doubt any miraculous events that are related by Moses or by the evangelists. His lively idea of those places passes by an easy transition to the events that are supposed to have been related to them by contiguity, and increases his belief by increasing the vivacity of his conception. A memory of these fields and rivers has the same influence on ordinary people as a new argument would - and from the same causes!

Something similar holds for resemblance. I have remarked that the conclusion we draw from a present object to its absent cause or effect is never based on any qualities that we observe in that object considered in itself; or, in other words, that it is only through experience that one can determine what will result from any event or what it resulted from. But though this is so obvious that it didn't seem to need supporting argument, some philosophers have imagined that there *is* a visible cause for the communication of motion, and that a reasonable man could *immediately* infer the motion of one body from the impact of another, without appealing to any past observation. It is easy to prove that this is false, thus:

If such an inference can be drawn merely from the ideas of body, motion, and impact, it must amount to a *demonstration*, and must imply the absolute impossibility of any contrary supposition. It follows from this that 'A case of impact caused something other than the communication of motion' implies a formal contradiction: it not only can't possibly be true, it can't even be *conceived*. But we can quickly satisfy ourselves that this is wrong by forming a clear and consistent idea of one body's colliding with another, and

immediately coming to rest, or  
going back in the same line in which it came, or  
going out of existence, or  
moving in a circle or an ellipse,

or - cutting it short - going through any one of countless of other changes.

These suppositions are all consistent and natural; and the reason why some philosophers imagine the communication of motion to be *more* consistent and natural, not only than those suppositions but also than any other natural effect, is based on the *resemblance* between the cause and the effect - ·motion into the collision, motion out of it·. In this case the *resemblance* combines with *experience* ·of motion in, motion out· - and binds the objects in the closest and most intimate manner to each other, so as to make those philosophers imagine them to be absolutely inseparable. Resemblance, then, has the same influence as experience, or anyway a parallel one; and as the only immediate effect of experience is to associate our ideas together, it follows that all belief arises from the association of ideas - which is what my hypothesis says.

Writers on optics all agree that the eye at all times sees the same number of physical points, and that a man on a mountain-top has no larger an image presented to his senses than when he is cooped up in the smallest room. It is only through experience that he infers from some special qualities of the image the largeness of the object ·he is seeing·; and here as in other contexts he confuses this inference of his judgment with a sensation. [Hume develops this point in some detail, giving a special role to the relation of resemblance; omitted here.]

No weakness of human nature is more universal and conspicuous than what we commonly call ‘credulity’, or a too easy belief in what others say; and this weakness is also very naturally accounted for by the influence of resemblance. When we accept any matter of fact on the strength of human testimony, our belief comes from the very same source as our inferences from causes to effects, and from effects to causes. Our experience of the governing principles of human nature is the only possible basis for any confidence we may have in the veracity of men. But though experience is the true standard for this as of all other judgments, we seldom regulate ourselves entirely by it, and have a remarkable propensity to believe whatever we are told - even about apparitions, enchantments, and wonders, however contrary to daily experience and observation. The words or discourses of other people have an intimate connection with certain ideas in their minds, and these ideas have a connection with the facts or objects that they represent. This latter connection is generally much overrated, and commands our assent beyond what experience will justify; and the explanation for this must lie in the resemblance between the ideas ·of the speakers· and the ·supposed· facts. Other effects indicate their causes only in an *oblique* manner; but the testimony of men does it *directly*, and is to be considered as a likeness as well as an effect. So it is not surprising that we are so rash in drawing inferences from it, and are less guided by experience in our judgments about it than we are in our judgments about any other subject.

Just as resemblance when combined with causation strengthens our reasonings, so a considerable lack of resemblance can almost entirely destroy them. A remarkable example of this is the universal carelessness and stupidity of men with regard to a future state, a topic in which they show as obstinate an *incredulity* as they do a blind credulity about other things. There is indeed no richer source of material for a studious man’s wonder, and a pious man’s regret, than the negligence of the bulk of mankind concerning their after-life; and it is with reason that many eminent theologians have been so bold as to say that though common people don’t explicitly assent to any form of infidelity they are really infidels in their hearts and have nothing like what we could call a *belief* that their souls are eternal. Let us consider on the one hand what divines have presented with such eloquence about the importance of eternity, ·which is to be spent either in heaven or in hell·; and in estimating this let us reflect that though in matters of rhetoric we can expect some exaggeration, in *this* case we must allow that the strongest figures of speech fall infinitely short of the subject. Then let us view on the other hand how prodigiously *safe* men feel about this! Do these people really *believe* what they are taught, and what they claim to affirm? Obviously not. ·And I shall now explain why·.

Given that belief is an act of the mind arising from custom, it isn’t surprising that a lack of resemblance should overthrow what custom has established, and lessen the force of the idea as much as custom increases it. A future state is so far removed from our

comprehension, and we have so obscure an idea of *how* we shall exist after our bodies have disintegrated, that all the reasons we can devise - however strong in themselves and however much assisted by education - can never, in people with slow imaginations, surmount this difficulty and bestow a sufficient authority and force on the idea. I ascribe this incredulity to the faintness of our idea of our future condition, derived from its lack of resemblance to the present life, rather than to faintness derived from the after-life's remoteness in time. For I observe that men are everywhere concerned about what may happen *in this world* after their death, and that nearly everyone has some care for his post-mortem reputation, his family, his friends, and his country.

[Then a paragraph continuing this theme, adducing other evidence that hardly anyone really *believes* that he is at risk of eternal damnation.]

I would further remark that in matters of religion men take a pleasure in being terrified, and that no preachers are as popular as those who arouse the most dismal and gloomy emotions. In the common affairs of life, where we feel and are penetrated with the reality of the subject, nothing can be nastier than fear and terror; it is only in dramatic performances and religious discourses that they ever give pleasure. In these latter cases the imagination lazily admits the idea; and the emotion, being softened by the lack of belief in what is said, has merely the agreeable effect of enlivening the mind and fixing the attention.

My hypothesis will be further confirmed if we examine the effects of other kinds of custom as well as of other relations. Custom, to which I attribute all belief and reasoning, can operate on the mind in invigorating an idea in two different ways. One is the way I have been describing. If in all past experience we have found two kinds of objects to be always conjoined together, the appearance of one of these objects in an impression leads us, through custom, to move easily to the idea of the kind of object that usually accompanies it; and the present impression and the easy transition make us conceive that idea in a stronger and more lively manner than we do any loose floating image of the imagination. But let us next suppose that a mere idea alone, without any of this curious and almost artificial preparation of experienced linkage with something else, should frequently appear to the mind, this idea must gradually become easier to have and more forceful when it does occur; and this facility and force - this easy introduction and firm hold on the mind - distinguish this recurring idea from any new and unusual idea. This is the only respect in which these two kinds of custom agree; and if it turns out that their effects on judgment are similar, we can certainly conclude that my account of judgment or belief is satisfactory. Well, *is* their influence on judgment similar? Who can doubt it when we consider the nature and effects of education?

All the opinions and notions of things to which we have been accustomed from our infancy take such deep root that it is impossible for us, by all the powers of reason and experience, to eradicate them; and this *habit* has an influence that is as strong as the influence arising from the constant and inseparable union of causes and effects. Indeed, it is sometimes *stronger*, and *overcomes* the latter influence. Don't say that the vividness of the idea produces the belief; the vivid idea *is* the belief. The frequent repetition of an idea fixes it in the imagination, but such a repetition couldn't possibly produce belief all by itself if we were so built that belief could come only through reasoning and comparison of ideas. . . .

(Here are three parallel instances. ¶Someone who has lost a leg or an arm by amputation tries for a long time afterwards to use the lost limb. ¶After someone's death it is common for members of his household, especially the servants, to say that they can hardly believe he is dead, but still imagine him to be in his study or wherever else in the house they were accustomed to find him. ¶In conversation about some celebrated person, I have often heard something like this: 'I never saw him, but I almost fancy that I have, because I have so often heard talk of him.')

If we look at this argument from education in the right way, it will appear very convincing; and all the more so from being based on one of the most common phenomena that is to be met with anywhere. We are all familiar with *education*; and I am contending that the core of education is the production of beliefs through sheer repetition of certain ideas - that is, through creating customs of the second of the two kinds I have mentioned. I am convinced that more than half of the opinions that prevail among mankind are products of education, and that the principles that are implicitly embraced from this cause over-balance the ones that come either from abstract reasoning or from experience. [Hume's word 'over-balance' might mean 'outnumber' or 'overpower' or both.] As liars through the frequent repetition of their lies come at last to *remember* them, so our judgment, or rather our imagination, can through similar repetition have ideas so strongly and brightly imprinted on it that they operate on the mind in the same way as do the perceptions that reach us through the senses, memory, or reason. But as education is an artificial and not a natural cause, and as its maxims are frequently contrary to reason and even to one another in different times and places, philosophers don't take account of it in their theorizing about belief, though in reality it is built on almost the same foundation of custom and repetition as are our natural reasonings from causes and effects.<sup>2</sup>

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<sup>2</sup> I should remark that as our assent to all probable reasonings is based on the vivacity of ideas, it resembles many of the whimsies and prejudices that are rejected as 'mere offspring of the imagination'. From this way of talking we learn that 'imagination' is commonly used in two different senses; and in the following reasonings I have used it in both of them (I know that nothing is more contrary to true philosophy than this sort of inaccuracy). When I contrast ¶imagination with ¶memory, I mean (-broad sense-) the faculty by which we form our fainter ideas. When I contrast it with ¶reason, I mean (-narrower sense-) the same faculty but excluding our demonstrative and probable reasonings. When I am not contrasting it with either memory or reason, it doesn't matter whether you take it in the broader or narrower sense, or at least the context will sufficiently explain the meaning.

### Section 10<sub>iii</sub>: The influence of belief

[This section discusses, with examples, ways in which imagination and belief interact with one another, always with an eye to confirming Hume's own theory about what belief is.]

### Section 11<sub>iii</sub>: 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  $\checkmark$ knowledge and  $\checkmark$ 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'. One would look ridiculous if one said that it is only probable that  $\checkmark$ the sun will rise to-morrow, or that  $\checkmark$ 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  $\checkmark$ 'knowledge' I mean the assurance arising from the comparison of ideas. By  $\checkmark$ 'proofs' I mean arguments that are derived from the relation of cause and effect, and are entirely free from doubt and uncertainty. By  $\checkmark$ 'probability' I mean the evidentness that is still accompanied by uncertainty. It is this third sort of reasoning that I proceed to examine in this section.

Probability - or reasoning from conjecture - can be divided into two kinds, one based on  $\checkmark$ chance, the other on  $\checkmark$ 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 in question. . . .

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  $\checkmark$ greater number of  $\checkmark$ equal chances. If we said that one chance could be greater than another in any other way, 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  $\bar{Y}$ chance and  $\bar{Y}$ causation. The two are directly contrary, yet we can't conceive the combination I have mentioned without supposing that  $\bar{Y}$ causes are mixed in among the  $\bar{Y}$ chances - supposing  $\bar{Y}$ necessity in some details and total  $\bar{Y}$ 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  $\bar{Y}$ chance is merely the negation of a cause, and produces total indifference in the mind; that  $\bar{Y}$ one negation of a cause and one total indifference can never be greater or lesser than another; and that  $\bar{Y}$ 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  $\bar{Y}$ demonstration nor  $\bar{Y}$ probability has any role in getting a greater number of chances to produce our assent . . . I shall take these one at a time.

·Regarding  $\bar{Y}$ 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  $\bar{Y}$ 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 where 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.

The question remains: by what means 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.

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 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 considers 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 places it on the table and views [here = 'imagines'] it as having 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 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 vivacity 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 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 vivacity of the idea is always proportional to the degrees of the push or tendency to make the transition; and according to my doctrine that vivacity of the idea is belief.

### Section 12<sub>iii</sub>: 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 evidence 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 vivacity 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 stroke of the pencil, which gives additional vivacity to the colours without altering any of the figures or adding to them.

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 shouldn't give offence by their the air of subtlety. 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.)

[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. These arguments of mine do no doubt take some trouble to understand; 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. Omitted.]

[Two paragraphs in which Hume 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 ohs ‘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’. Omitted]

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 vivacity 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 vivacity 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<sub>iii</sub>: 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 vivacity. 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 vivacity of all the ideas comes from the original impression, through the customary transition of the imagination; and it is obvious that this vivacity 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 more lively 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 arguments 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 as 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 vivacity 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 vivacity.

(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 iv.1 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 comes to 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 vivacity 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 *this 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 high the air without support fell 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 giving 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 on 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 what belief is.]

### **Section 76 14<sub>iii</sub>: 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 (in 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 to 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 accept 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)

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 of inventing any long arguments; all you need 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 those motions and configurations and qualities with which it is endowed.

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 as all ideas are derived from some previous perceptions we can't have any idea of  $\Psi$ power and efficacy unless instances can be produced in which this  $\Psi$ 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 principle 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  $\Psi$ unknown quality; but the idea couldn't be derived from such a quality, and as there is nothing in  $\Psi$ known qualities that could produce it, 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  $\dot{Y}$ an act of volition and  $\dot{Y}$ 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>3</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  $\dot{Y}$ conceive the connection between the cause and the effect distinctly and in detail, and  $\dot{Y}$ 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 demonstration, 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  $\dot{Y}$ particular power can

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<sup>3</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.

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 distinct 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 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 shall want 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  $\dot{V}$ revealed or  $\dot{V}$ 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.

$\dot{V}$ The necessary connection between causes and effects is the basis of our inference from one to the other. The basis of our inference is  $\dot{V}$ the transition  $\cdot$ in our minds $\cdot$  arising from the accustomed union. These, therefore, are the same:  $\cdot$ 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 $\cdot$ .

The idea of necessity arises from some impression. No impression conveyed by our  $\cdot$ outer $\cdot$  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  $\cdot$ the impression of $\cdot$  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 iv.5. 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 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* 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 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 conveys to 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). 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 more lively idea of the other.

If you reject this too for the same reason - ·because in addition 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,

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 reasoning.

(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 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 metaphysical 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 more lively 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 any object 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 any I-know-not-what of which we don't have an idea. . . .

### **Section 15<sub>iii</sub>: 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 difference in 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<sub>iii</sub>: 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 sort 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 such subtlety and refinement of thought that it is out of reach not only of mere animals but even of children and common people in our own species, even though 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 sagacity which 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 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 reduced to the very same principles 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.