



**David Hume (1711-1776)** was one of the most brilliant thinkers of the Enlightenment, and paradoxically, it was his rigorous employment of the solid, critical reflection so prized by the Enlightenment philosophers that led him toward a scepticism that threatened to undermine the Enlightenment itself. He came to the conclusion that, both in science and philosophy, reason had overstepped its bounds. The best thinking of the Enlightenment could not accomplish what it had set out to do. Starting from Descartes, what the Enlightenment had set out to do was to root out all the vestiges of authoritarianism, prejudice and superstition that had undermined medieval thinking and provide a solid foundation for knowledge. Hume drew out the final skeptical consequences of the initial Cartesian starting point of modern philosophy, with its representational theory of knowledge and understanding of the mind as a mirror of nature. Hume carried out the

empiricist epistemological critique begun by Locke to its final extreme. Hume's famous analysis in *An Inquiry Concerning Human Understanding* of the problem of causality had shown that human reason could not even account for the necessary connection between *cause and effect*.

Hume begins Section IV of the *Inquiry* with a distinction that has come to be referred to as 'Hume's Fork': all knowledge claims are either *relations of ideas* or *matters of fact*. By relations of ideas Hume means those kinds of statements that are necessarily true, like the propositions of mathematics. Hume gives the example of the Pythagorean theorem which is necessarily true, by the very definition of a right triangle. Another example would be a statement like "all bachelors are unmarried men," a statement which is necessarily true by definition of 'bachelor.' Such statements are true *a priori*, that is, one does not need sense evidence to establish the truth of the claim. Matters of fact statements, however, are never necessarily true but only contingently so. A statement like "all swans are white" is not necessarily true. Its truth is not necessary but must be established *a posteriori*, that is, by *experience*. Any belief that is not a relation of ideas and thus necessarily true, and for which there is no sense evidence to support it, should be, as Hume suggests in the famous conclusion of his *Inquiry*, committed to the flames.

Obviously this raises a problem for many religious beliefs, for statements like "God exists" and "the soul is immortal" are not relations of ideas but matters of fact statements which have no supporting evidence from experience. While some may not have found such theological scepticism too troubling, Hume's application of his fork to the problem of causality seemed potentially devastating for the whole Enlightenment project.

After establishing in Section IV that all causal claims are established not *a priori* but by experience, the crucial part of Hume's analysis of the problem of causality occurs in Section VII in his examination of the supposed necessary connection between cause and effect. As billiards was a favorite pastime in 18<sup>th</sup> century England, Hume illustrated the problem of causality by considering the collision of billiard balls. To determine that the movement of one billiard ball caused the movement of another billiard ball four steps would need to be validated by experience: 1. *Temporal priority*—for the movement of ball A to be the cause of the movement of B, A would have to move first; 2. *Spatial contiguity*—ball A would have to touch ball B; 3. *Constant conjunction*— it is only by seeing two events regularly conjoined that one would suspect one to be the cause of the other. All three of these steps can be validated by experience; however as Hume's analysis in this section demonstrated, there can be no sense evidence verifying the critical fourth step—the *Necessary connection* between the two events. Thus any claim concerning *cause and effect* cannot be established by the understanding. Hume's analysis seemed to lead to a deep scepticism that threatened to call into question all the claims of science as well as religion.

*An Inquiry Concerning Human Understanding*

## Section IV

## Sceptical Doubts Concerning the Operations of the Understanding

## Part I

All the objects of human reason or inquiry may naturally be divided into two kinds, 322  
to wit, *relations of ideas*, and *matters of fact*. Of the first kind are the sciences of  
geometry, algebra, and arithmetic; and in short, every affirmation which is either  
intuitively or demonstratively certain. *That the square of the hypothenuse is equal to  
the square of the two sides*, is a proposition which expresses a relation between these  
figures. *That three times five is equal to the half of thirty*, expresses a relation between  
these numbers. Propositions of this kind are discoverable by the mere operation of  
thought, without dependence on what is anywhere existent in the universe. Though  
there never were a circle or triangle in nature, the truths demonstrated by Euclid would  
for ever retain their certainty and evidence.

Matters of fact, which are the second objects of human reason, are not ascertained  
in the same manner; nor is our evidence of their truth, however great, of a like nature  
with the foregoing. The contrary of every matter of fact is still possible; because it can  
never imply a contradiction, and is conceived by the mind with the same facility and  
distinctness, as if ever so conformable to reality. *That the sun will not rise tomorrow* is  
no less intelligible a proposition, and implies no more contradiction than the 323  
affirmation, *that it will rise*. We should in vain, therefore, attempt to demonstrate its  
falsehood. Were it demonstratively false, it would imply a contradiction, and could  
never be distinctly conceived by the mind.

It may, therefore, be a subject worthy of curiosity, to inquire what is the nature of  
that evidence which assures us of any real existence and matter of fact, beyond the  
present testimony of our senses, or the records of our memory. This part of philosophy,  
it is observable, has been little cultivated, either by the ancients or moderns; and  
therefore our doubts and errors, in the prosecution of so important an inquiry, may be  
the more excusable; while we march through such difficult paths without any guide or  
direction. They may even prove useful, by exciting curiosity, and destroying that  
implicit faith and security, which is the bane of all reasoning and free inquiry. The  
discovery of defects in the common philosophy, if any such there be, will not, I  
presume, be a discouragement, but rather an incitement, as is usual, to attempt  
something more full and satisfactory than has yet been proposed to the public.

All reasonings concerning matter of fact seem to be founded on the relation of  
*cause and effect*. By means of that relation alone we can go beyond the evidence of our  
memory and senses. If you were to ask a man, why he believes any matter of fact,  
which is absent; for instance, that his friend is in the country, or in France; he would  
give you a reason; and this reason would be some other fact; as a letter received from  
him, or the knowledge of his former resolutions and promises. A man finding a watch  
or any other machine in a desert island, would conclude that there had once been men  
in that island. All our reasonings concerning fact are of the same nature. And here it is  
constantly supposed that there is a connection between the present fact and that which is

inferred from it. Were there nothing to bind them together, the inference would be entirely precarious. The hearing of an articulate voice and rational discourse in the dark assures us of the presence of some person: Why? because these are the effects of the human make and fabric, and closely connected with it. If we anatomize all the other reasonings of this nature, we shall find that they are founded on the relation of cause and effect, and that this relation is either near or remote, direct or collateral. Heat and light are collateral effects of fire, and the one effect may justly be inferred from the other.

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If we would satisfy ourselves, therefore, concerning the nature of that evidence, which assures us of matters of fact, we must inquire how we arrive at the knowledge of cause and effect.

I shall venture to affirm, as a general proposition, which admits of no exception, that the knowledge of this relation is not, in any instance, attained by reasonings *a priori*; but arises entirely from experience, when we find that any particular objects are constantly conjoined with each other. Let an object be presented to a man of ever so strong natural reason and abilities; if that object be entirely new to him, he will not be able, by the most accurate examination of its sensible qualities, to discover any of its causes or effects. Adam, though his rational faculties be supposed, at the very first, entirely perfect, could not have inferred from the fluidity and transparency of water that it would suffocate him, or from the light and warmth of fire that it would consume him. No object ever discovers, by the qualities which appear to the senses, either the causes which produced it, or the effects which will arise from it; nor can our reason, unassisted by experience, ever draw any inference concerning real existence and matter of fact.

This proposition, *that causes and effects are discoverable, not by reason but by experience*, will readily be admitted with regard to such objects, as we remember to have once been altogether unknown to us; since we must be conscious of the utter inability, which we then lay under, of foretelling what would arise from them. Present two smooth pieces of marble to a man who has no tincture of natural philosophy; he will never discover that they will adhere together in such a manner as to require great force to separate them in a direct line, while they make so small a resistance to a lateral pressure. Such events, as bear little analogy to the common course of nature, are also readily confessed to be known only by experience; nor does any man imagine that the explosion of gunpowder, or the attraction of a loadstone, could ever be discovered by arguments *a priori*. In like manner, when an effect is supposed to depend upon an intricate machinery or secret structure of parts, we make no difficulty in attributing all our knowledge of it to experience. Who will assert that he can give the ultimate reason, why milk or bread is proper nourishment for a man, not for a lion or a tiger? . . .

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Section VII  
Of the Idea of Necessary Connection  
Part II

But to hasten to a conclusion of this argument, which is already drawn out to too great a length: we have sought in vain for an idea of power or necessary connection in all the sources from which we could suppose it to be derived. It appears that, in single instances of the operation of bodies, we never can, by our utmost scrutiny, discover any thing but one event following another, without being able to comprehend any force or power by which the cause operates, or any connection between it and its supposed effect. The same difficulty occurs in contemplating the operations of mind on body—where we observe the motion of the latter to follow upon the volition of the former, but are not able to observe or conceive the tie which binds together the motion and volition, or the energy by which the mind produces this effect. The authority of the will over its own faculties and ideas is not a whit more comprehensible: so that, upon the whole, there appears not, throughout all nature, any one instance of connection which is conceivable by us. All events seem entirely loose and separate. One event follows another; but we never can observe any tie between them. They seem *conjoined*, but never *connected*. And as we can have no idea of any thing which never appeared to our outward sense or inward sentiment, the necessary conclusion *seems* to be that we have no idea of connection or power at all, and that these words are absolutely, without any meaning, when employed either in philosophical reasonings or common life. 359 360

But there still remains one method of avoiding this conclusion, and one source which we have not yet examined. When any natural object or event is presented, it is impossible for us, by any sagacity or penetration, to discover, or even conjecture, without experience, what event will result from it, or to carry our foresight beyond that object which is immediately present to the memory and senses. Even after one instance or experiment where we have observed a particular event to follow upon another, we are not entitled to form a general rule, or foretell what will happen in like cases; it being justly esteemed an unpardonable temerity to judge of the whole course of nature from one single experiment, however accurate or certain. But when one particular species of event has always, in all instances, been conjoined with another, we make no longer any scruple of foretelling one upon the appearance of the other, and of employing that reasoning, which can alone assure us of any matter of fact or existence. We then call the one object, *cause*; the other, *effect*. We suppose that there is some connection between them; some power in the one, by which it infallibly produces the other, and operates with the greatest certainty and strongest necessity. 361

It appears, then, that this idea of a necessary connection among events arises from a number of similar instances which occur of the constant conjunction of these events; nor can that idea ever be suggested by any one of these instances, surveyed in all possible lights and positions. But there is nothing in a number of instances, different from every single instance, which is supposed to be exactly similar; except only, that after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This

connection, therefore, which we *feel* in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connection. Nothing farther is in the case. Contemplate the subject on all sides; you will never find any other origin of that idea. This is the sole difference between one instance, from which we can never receive the idea of connection, and a number of similar instances, by which it is suggested. The first time a man saw the communication of motion by impulse, as by the shock of two billiard balls, he could not pronounce that the one event was *connected*: but only that it was *conjoined* with the other. After he has observed several instances of this nature, he then pronounces them to be *connected*. What alteration has happened to give rise to this new idea of *connection*? Nothing but that he now *feels* these events to be *connected* in his imagination, and can readily foretell the existence of one from the appearance of the other. When we say, therefore, that one object is connected with another, we mean only that they have acquired a connection in our thought, and give rise to this inference, by which they become proofs of each other's existence: A conclusion which is somewhat extraordinary, but which seems founded on sufficient evidence. Nor will its evidence be weakened by any general diffidence of the understanding, or sceptical suspicion concerning every conclusion which is new and extraordinary. No conclusions can be more agreeable to scepticism than such as make discoveries concerning the weakness and narrow limits of human reason and capacity.

And what stronger instance can be produced of the surprising ignorance and weakness of the understanding than the present. For surely, if there be any relation among objects which it imports to us to know perfectly, it is that of cause and effect. On this are founded all our reasonings concerning matter of fact or existence. By means of it alone we attain any assurance concerning objects which are removed from the present testimony of our memory and senses. The only immediate utility of all sciences, is to teach us, how to control and regulate future events by their causes. Our thoughts and inquiries are, therefore, every moment, employed about this relation: yet so imperfect are the ideas which we form concerning it, that it is impossible to give any just definition of cause, except what is drawn from something extraneous and foreign to it. Similar objects are always conjoined with similar. Of this we have experience. Suitably to this experience, therefore, we may define a cause to be *an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second*. Or in other words *where, if the first object had not been, the second never had existed*. The appearance of a cause always conveys the mind, by a customary transition, to the idea of the effect. Of this also we have experience. We may, therefore, suitably to this experience, form another definition of cause, and call it, *an object followed by another, and whose appearance always conveys the thought to that other*. But though both these definitions be drawn from circumstances foreign to the cause, we cannot remedy this inconvenience, or attain any more perfect definition, which may point out that circumstance in the cause, which gives it a connection with its effect. We have no idea of this connection, nor even any distinct notion what it is we desire to know, when we endeavour at a conception of it. We say, for instance, that the vibration of this string is the cause of this particular sound. But what do we mean by that affirmation? We either mean that this vibration is followed by this sound, and

that all similar vibrations have been followed by similar sounds; or, that this vibration is followed by this sound, and that upon the appearance of one the mind anticipates the senses, and forms immediately an idea of the other. We may consider the relation of cause and effect in either of these two lights; but beyond these, we have no idea of it.

To recapitulate, therefore, the reasonings of this section: every idea is copied from some preceding impression or sentiment; and where we cannot find any impression, we may be certain that there is no idea. In all single instances of the operation of bodies or minds, there is nothing that produces any impression, nor consequently can suggest any idea of power or necessary connection. But when many uniform instances appear, and the same object is always followed by the same event; we then begin to entertain the notion of cause and connection. We then feel a new sentiment or impression, to wit, a customary connection in the thought or imagination between one object and its usual attendant; and this sentiment is the original of that idea which we seek for. For as this idea arises from a number of similar instances, and not from any single instance, it must arise from that circumstance, in which the number of instances differ from every individual instance. But this customary connection or transition of the imagination is the only circumstance in which they differ. In every other particular they are alike. The first instance which we saw of motion communicated by the shock of two billiard balls (to return to this obvious illustration) is exactly similar to any instance that may, at present, occur to us; except only, that we could not, at first, *infer* one event from the other; which we are enabled to do at present, after so long a course of uniform experience. I know not whether the reader will readily apprehend this reasoning. I am afraid that, should I multiply words about it, or throw it into a greater variety of lights, it would only become more obscure and intricate. In all abstract reasonings there is one point of view which, if we can happily hit, we shall go farther towards illustrating the subject than by all the eloquence and copious expression in the world. This point of view we should endeavour to reach, and reserve the flowers of rhetoric for subjects which are more adapted to them. . .

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Section XII  
Of the Academical or Sceptical Philosophy  
Part III

. . . When we run over libraries, persuaded of these principles, what havoc must we make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact and existence? No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.

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Hume, David *An Inquiry Concerning Human Understanding*. In *The Empiricists*. Garden City, New York: Anchor Books, 1974.

KEY TERMS

Empiricism

*tabula rasa*

primary qualities

secondary qualities

idealism

*esse est percipi*

relations of ideas

matters of fact

Question

1. What is meant by “Hume’s fork”? How did Hume apply this fork in arriving at very skeptical conclusions which seemed, perhaps, to pull the very rug out from under the *Enlightenment*?