

Probability

(a further “experiment” to prove the explanatory power of the theory given so far)

Though scientists think chance does not exist, our ignorance of specific causes puts us in a situation where we are often only able to know that a generic sort of cause can produce any of a number of alternative effects.

e.g., tossing a die or picking a card could produce any of a number of alternative results.

Sometimes, the number of possibilities is itself only discovered by experience

e.g., what could happen to a ship to keep it from returning to port

In these cases, we *as a matter of fact* form a belief that is proportioned to the probability of the event.

Why?

No account of the workings of the mind has explained this.

Hume's problem

When you calculate a probability mathematically, what you discover is a relation of ideas.

But relations of ideas do not *enliven* ideas.

They cannot produce belief in any matter of fact or existence.

Yet, in the case of belief based on calculations of probability we nonetheless get belief.

More precisely, *some* of us get belief

(these are “the wise” who have the ability to “proportion belief to the evidence”)

How could this be?

What accounts for how any of us get belief on the basis of a calculation of probabilities, and why only some of us and not others?

The probabilistic theory of the *Enquiry*

We need not just throw up our hands and say that some “inexplicable contrivance of nature” ensures that our beliefs in the outcomes of causes will be proportioned to the frequency with which those outcomes come up in a survey of the total number of possibilities.

Instead, note that when we survey the possible outcomes of an event and certain ones come up more often

something happens that is very much like what happens when we form a belief in the connection of causes and effects

custom induces an association

(though not as strong a one as would arise had the cases been uniform)

Details from the *Treatise*

Where there are multiple possible outcomes of a cause,

or a cause has been tested a number of times in the past and found to lead sometimes to one result, sometimes to others

the vivacity of the impression or memory of the cause gets split up between each possibility or each past trial

where possibilities or past trials are the same, the vivacity of those possibilities/trials combines

the outcome with the most vivacity is considered to be the most probable

if the most probable outcome has enough vivacity to cancel out the combined vivacity of the rival possibilities, it is believed with a degree of strength proportioned to the remaining vivacity.

Hume's law of probability

$$\frac{m-n}{m+n}$$

where m is the number of times the most probable occurrence comes up in a survey of the number of possibilities or the number of past trials

and n is the combined number of times the alternative occurrences come up in a survey of the total number of possibilities or the number of past trials

Why aren't we all affected in the same way by the same evidence?

The beliefs of “the wise” are governed by an “indifference” principle.

In the mind of a wise person, each “possibility” in the total number of possible outcomes,

or each past instance in a survey of all the past outcomes

is considered to be equally likely

(it receives an equal share of the total amount of vivacity available for distribution)

But this is not the most natural and immediate state of affairs. There are various factors that produce an imbalance in the share of vivacity attributed to different outcomes:

- proximity in time and place
- resemblance
- associated passions
- education
- general rules

Outcome

Most people will form beliefs based not just on “the evidence” (the true proportion of times an outcome occurs in the total number)

but on these other factors

“The wise,” who inhabit the laboratories and research institutions and read academic journals, form beliefs on the basis of a statistically sound survey of alternatives grounded in a principle of indifference

“Fools,” who inhabit the donut shops and bowling alleys and read the Toronto Sun, form beliefs based on recent, lurid anecdotes

Two questions

Who is right?

Neither, because causal inference is not rationally justified on any principle

What accounts for the difference, and makes one sort of person “wise” and another “a fool?”

Experience, leading to the formation of general rules

The influence of experience

The wise have had experiences that have led them to associate beliefs formed on a basis of sound statistics with truth

(they have discovered that beliefs formed on this basis tend to be more reliably true)

Fools have not had that sort experience

Each “class” of knower is what their experiences have made them, and no amount of logic or reasoning will convert a member of one class to the other.

Each will forever regard the other with contempt and derision

(or until such time as they have experiences that convert them from the one class to the other)

Hume's challenge

Let anyone else, on any other theory of the workings of the mind, come up with an equally plausible account of how we get belief in probabilities.

Necessary Connection

We think that causes do not just regularly precede their effects in time but that they produce their effects

that they contain something in virtue of which they are able to make their effects come to be

Principal Claims of *Enquiry VII*

We have no impression of any such thing from any single instance of causal relation, and consequently have no true idea of any such thing.

We see nothing in those external objects we consider to be causes that accounts for how they bring about their effects

We experience nothing in our own will that accounts for how it is able to make our bodies move

We experience nothing in our own will that accounts for how it is able to make our ideas of memory and imagination appear and disappear

(Incidentally, this means that the occasionalist causality of Malebranche and Berkeley is no more intelligible than more vulgar views)

So how do we get the idea that there is any such thing as
a necessary connection?

We feel something in ourselves when we view a cause

we feel our minds pulled or impelled to form the
idea of its effect

Because this feeling always occurs in conjunction with
the view of a cause, we confuse it with a quality in the
cause

in effect, we project our own, subjective feelings
onto external objects

(this is something we have a strong propensity
to do — it also happens with secondary
qualities)

we “guild or stain the world with our feelings”

But it is all a confusion.

We confuse a subjective impulse to form the idea of
the effect something in the cause that objectively
impels the formation of the effect

Upshot: There is no more to cause, objectively considered, than constant conjunction.

Though we may object that there is more to causality than just constant conjunction

all that this objection reduces to is the thought that things that we have so far experienced to be constantly conjoined might be discovered by future experience to have exceptions

a “merely accidental” conjunction that never revealed itself as such by failing to occur just is a causal relation

Hume's arguments

1. Reasons why we see no necessary connections in nature.

When we see a cause for the first time, we cannot say what its effect will be.

But if we saw anything in the cause in virtue of which it was able to make its effect come about, we would be able to say in advance what the effect would be.

In principle, causes are distinct and separable from their effects and so can be conceived apart from them

That also means that we couldn't possibly see anything in them in virtue of which they are connected with their effects

Hume's arguments

2. Reasons why we see no necessary connections in the will (specifically between will and body motion)

1. as long as we suppose the mind is a spiritual substance and the body is material, it seems in principle impossible to explain how the one could act on the other

but we would have an explanation if we actually saw what it is in the will in virtue of which it is able to make the body move

2. only experience tells us which of our body parts we can move and which we cannot

but if we really did know what it is in the will in virtue of which it is able to make the body move we would be able to tell this in advance

3. we think the will moves body parts directly because we experience a constant conjunction between volitions and motions of body parts

but anatomy tells us that body parts are not moved directly but only through the prior movement of muscles, nerves, [and hormones]

but if we knew what it is in the will in virtue of which it is able to make the body move we would have known right from the start that it moves the glands and nerves and not the limbs, just as when driving a car you know you are moving the accelerator and brake pedal and not the wheels and brakes

Hume's arguments

3. Reasons why we see no necessary connections in the will (specifically between will and thought)

1. it seems impossible to explain how the mind could make ideas come and go

because this involves an act of bringing something to be out of nothing and annihilating it into nothing

but we would have an explanation of how that it possible if we saw what it is in the will in virtue of which it is able to make ideas come and go

2. it is only experience that tells us which sorts of ideas we can produce and which we cannot produce, or can produce or prevent only with difficulty (e.g., passions)

3. likewise, it is only experience that tells us when we can produce ideas easily and when we can only produce them with difficulty (as when affected by drugs, sleeplessness, age, etc.)

but if we knew what it is in the will in virtue of which it is able to produce ideas we would be able to tell this in advance

Hume's arguments

4. Reasons why the idea of necessary connection can only be based on a subjective feeling in us

When we see a cause for the first time we cannot say what its effect will be.

Likewise, when we see a cause being followed by its effect for the first time, we cannot be assured that the two are causally related.

A second and third experience do not do much to give us any assurance.

When we have seen the cause followed by its effect on numerous occasions, we consider there to be a causal connection between the two.

But what is there in repeated experiences of a conjunction that is not present in a single experience?

In multiple experiences of *the same* conjunction, there can by definition be nothing new in either of the conjoined objects

The only new thing is the habitual determination of the mind the experience creates in us.

Since this is the only thing that is different between cases where we get the idea of necessary connection and cases where we do not,

that must be what the idea is an idea of.

Hume's arguments

5. What is wrong with the occasionalist philosophy of Berkeley and Malebranche.

Just as we have no idea of anything in bodies in virtue of which they are able to bring about changes in themselves or in other things,

so we have no idea of anything in the will in virtue of which it is able to bring about changes in bodies or in ideas

So appealing to God's will as the cause of our ideas brings us no closer to understanding how our ideas come about.

Whether we say bodies impinging on the sense organs produce ideas or whether we say acts of will produce ideas, we are in both cases appealing merely to observed constant conjunctions between things between which we see no necessary connection.

The one explanation is not any more intelligible than the other.

Two definitions of “cause”

1. (A definition of the *relation* of cause and effect)

a cause is an object, A, that precedes another object, B, where all objects resembling A are preceded by objects resembling B

2. (A definition of the *property* of causal power)

a cause of an object, B, is an object, A, that impels the mind to conceive of B

Neither of these definitions tells us anything about what there might be in causes in virtue of which they bring about their effects.

And in fact we have no idea of any such thing.