Hume on Induction

Said Saillant

I Relations of Ideas and Matters of Fact

Hume argues that all objects of human thought, that is, all propositions, fall into one of two classes.

- S expresses a *relation of ideas* if and only if its denial is strictly impossible (inconceivable, self-contradictory).
  - E.g., "2+2 = 4," "All bachelors are unmarried," "Every triangle has three sides," "All tables are pieces of furniture."
- S expresses a *matter of fact* if and only if both it and its denial are possible (conceivable, non-self-contradictory).
  - E.g., "There is at least one bachelor in Cambridge," "The Sun will not rise tomorrow," "Sally is sitting in a chair."

For Hume relations of ideas are knowable *a priori*.[1] Either one appreciates their truth intuitively, that is, immediately upon understanding them, or by means of deductively valid argument, where

> Argument *A* is *deductively valid* if and only if it is impossible for the premises to be true and the conclusion false.

Hume sees nothing wrong with our knowledge of relations of ideas. The problem of induction concerns our knowledge of ***unobserved*** matters of fact. For Hume observed matters of facts are known on the basis of perception and memory. But neither perception nor memory is of any help explaining our opinions concerning *unobserved matters of fact*, which as Hume emphasizes include all our opinions concerning the future. We don't perceive the future, and we can't remember it. So how come we are so opinionated about matters of facts we have *never* experienced?

This is the problem of induction, and it has two parts.

i. The *descriptive problem*: How do we in fact form opinions about unobserved matters of fact?
ii. The *normative problem*: Is our way of forming opinions about unobserved matters of fact legitimate, justified? I.e., is our "reasoning" about matters of fact deductively valid?

II The Descriptive Problem

Hume's response is that:

*Opinions about unobserved matters of fact are derived from experience **somehow**.*

This seems to follow from a consideration of examples: how do we know how something never before examined will behave or what unobserved properties it might have? If the hypothesis we're

[1] Roughly, a *priori knowledge*: S knows p *a priori* iff S's reasons in support of p do not rest on sense experience.

considering is a matter of fact, any conjunction of properties is possible. So we must consult experience.

E.g.,

In my experience so far, chalk has always easily broken.

So, in general, chalk is easily broken.

Or, using one of Hume's examples:

In my experience so far, bread has always nourished.

So, in general, bread nourishes.

This appears to be a general pattern in our reasoning:

(Data)	In my/our experience, all Fs are G.
(Theory)	In general, all Fs are G (or at least the next F I examine will be G).

This sort of reasoning is called *induction*, or *inductive inference*. Hume's answer, then, to the descriptive problem is:

Opinions about unobserved matters of fact are derived from experience by induction.

III The Normative Problem

But the inference from (Data) to (Theory) is not deductively valid! It is possible for the premise to be true and the conclusion false. Are we justified in accepting (Theory) on the basis of (Data)? Is induction a legitimate or justified way of forming opinions about unobserved matters of fact?

- *First response*: *the uniformity of nature*. We can make the argument valid by supplying a missing premise: the future resembles the past, that is, nature is uniform.

(Data)	In my/our experience, all Fs are G.
(UN)	If a regularity has held in the past, it will continue to hold in the future.
(Theory)	In general, all Fs are G (or at least the next F I examine will be G).

Problem: Are we justified in accepting (UN)? The proposition that nature is uniform is a matter of fact. Its denial is possible/conceivable/non-self-contradictory. So it's not knowable a priori, but why should we think it true? Perhaps on the basis of induction: nature has been uniform in the past; in the past, it has been true that the future resembled the past. But this, as Hume notes, would be circular.

- *Second response: induction has worked so far!* Maybe our inductive inferences are justified because they work. So far, every time we've used induction, we've been right.

(Meta-Data)	All observed cases of induction have been successful.
(C)	All cases of induction are successful.

Problem: This argument is not deductively valid; it is an inductive inference. So for it to work induction must already be supposed to justify opinions about unobserved matters. This argument is therefore circular: it assumes induction works in order to establish that induction works.

- *Hume's skeptical solution:* The acceptance of (UN) is a matter of habit or custom, and it is not impossible, incoherent, or self-contradictory, so we have no a priori reason to deny it. Therefore, we are rationally justified in accepting (UN). In his words:

  > All inferences from experience, therefore, are effects of custom, not of reasoning. Custom, then, is the great guide of human life. It is that principle alone, which renders our experience useful to us, and makes us expect, for the future, a similar train of events with those which have appeared in the past (§5.6).

  Problem: The fact that we accept (UN) as a matter of habit or custom does not provide us with any reason to think that (UN) is true, for as Hume himself points out its acceptance makes experience incredibly *useful* even if in the end it may be misleading. The "solution" is skeptical then because while we may justifiably accept (UN), our reliance on it for the formation of opinions concerning unobserved matters of fact may guide our action, but does not lead to any knowledge of them.

IV Questions

- Does this show that we have no more reason to trust scientific inquiry than any other form of inquiry (crystal gazing, guessing, etc.) in our efforts to gain knowledge of nature?
- Is there any difference in kind between our confidence in science and religious faith?
- Are you satisfied by Hume's solution?

24.01 Classics of Western Philosophy

Spring 2016