

Hume and Russell on Induction

1. Inductive inference

• Inductive inferences can take one of two forms:

- (I) (1) All observed As have been Bs (for a large sample of As observed across variegated conditions)
(2) The next A will be a B
- (II) (1) All observed As have been Bs (for a large sample of As observed across variegated conditions)
(2) All As are Bs

• Inductive inferences are not *deductively* valid. Their premise does not *entail* their conclusion.

Nonetheless, all of us (I take it) believe that inductive inferences are reasonable inferences, and that the conclusions of inductive inferences are reasonable beliefs.

• Virtually all of our beliefs about the future are based on inductive inference. If induction does not provide us with the slightest reason for belief, then our beliefs about the future are completely unreasonable.

• No one denies that we will continue to use inductive inference in forming beliefs about the future. Indeed, it may be a deep fact about our psychology that we cannot fail to do so. The important philosophical question is whether beliefs arrived at in this way are reasonable.

• Hume's radical conclusion is that we do not have the slightest reason to believe any claim based on induction. Even more generally, Hume argues that we do not have the slightest reason to believe any claim about unobserved matters of fact (i.e., facts that we have never perceived to obtain). According to Hume, no belief about the unobserved is more reasonable than its negation.

2. Matters of fact and relations of ideas

• According to Hume, all claims or propositions are either matter of fact claims or relations of ideas claims. This doctrine is sometimes known as 'Hume's Fork.'

• Relations of ideas claims have two distinguishing characteristics:

- (1) They are *a priori*: they do not depend on experience for their justification.
- (2) They are necessary truths: their negations are contradictory.

Examples of relations of ideas claims: logical truths, analytic/conceptual truths, and mathematical truths.

• Matters of fact claims also have two distinguishing characteristics:

- (1) They are *a posteriori*: they depend on experience for their justification.
- (2) They are contingent truths: their negations are consistent; their negations do not imply contradictions.

3. A reconstruction of Hume's core argument for scepticism about the unobserved

• The Uniformity Principle:

(UP) Observed regularities and patterns in nature will generally hold up in unobserved cases.

Intuitively: the course of nature will remain uniform; the future will resemble the past.

• Hume's argument:

- (1) For S to have reason to believe any matter of fact claim about the unobserved, S must first have reason to believe that (UP) is true.
- (2) (UP) is not a relation of ideas claim.
- (3) All claims are either matters of fact claims or relations of ideas claims.
- (4) (UP) is a matter of fact claim. [From (2), (3)]
- (5) (UP) is a claim about the unobserved.
- (6) For S to have reason to believe that (UP) is true, S must first have reason to believe that (UP) is true. [From (1), (4), (5)]
- (7) S cannot have reason to believe that (UP) is true. [From (6)]
- (8) S cannot have reason to believe any matter of fact claim about the unobserved. [From (1), (7)]

4. Notes on Hume's argument

- The argument appears to be valid. If one has any quarrels with the argument, they can only concern its *soundness*. Moreover, the only contestable premise seems to be premise (1). If so, the cogency of this argument hinges exclusively on premise (1).
- Though I have formulated the argument in terms of a subject *having reason to believe* matters of fact claims about the unobserved, it can easily be reformulated in terms of a subject *having even the slightest reason to believe* such claims. So reformulated, the argument has the consequence that we don't have even the slightest reason to believe any claims about the unobserved.

5. Russell on inductive justifications for the uniformity principle and induction

- Consider the following attempt to justify the Uniformity Principle:
(1) In the past, regularities in nature generally held up in what were previously unobserved cases.
(2) In the future, regularities in nature generally will hold up in unobserved cases.
(UP) follows from (1) and (2): If (1) and (2) are both true, then, with respect to both past and future, regularities in nature will generally hold up in unobserved cases (UP). Furthermore, premise (1) is quite plausible. Thus, if the inference from (1) to (2) is a reasonable inference, we have reason to believe (UP).
- A reconstruction of Russell's criticism: The inference from (1) to (2) is not deductively valid. It is an inductive inference. Furthermore, (2) is a matter of fact claim about the unobserved. It follows from premise (1) of Hume's original argument that one cannot have reason to believe (2) on the basis of (1) unless one already has reason to believe that (UP) is true. Thus, the argument is question-begging: it presupposes that we have reason to believe the very conclusion it attempts to establish.
- Consider the following attempt to justify inductive inference:
(1) In the past, induction has been reliable.
(2) In the future, induction will be reliable.
- Again, Russell has a similar response: The inference from (1) to (2) is an inductive inference. One cannot use a particular inference form to justify that very inference form. If one could, one would be able to justify any inference form, including obviously fallacious inference forms like affirming the consequent. Consider:
(1) If affirming the consequent is valid, then snow is white.
(2) Snow is white.
(3) Affirming the consequent is valid.

6. Questions about Hume's argument for scepticism about the unobserved

- Hume wrote at a time when the underlying microstructure that explains an object's behavior was unknown to the scientific community. Does our current scientific knowledge of the explanatory properties of microstructure enable us to justify inductive inference?
- Both Hume and Russell are rather sketchy in their discussion of laws of nature. Does our current scientific understanding of the laws of nature enable us to justify inductive inference?
- As noted, the cogency of Hume's argument seems to hinge exclusively on the truth of premise (1). On pages 37-8 of his *Enquiry*, Hume seems to offer a single-premise argument for this pivotal claim:
[A]ll inferences from the experience *suppose, as their foundation*, that the future will resemble the past, and that similar powers will be conjoined with similar sensible qualities. If there be any suspicion that the course of nature may change, and that the past may be no rule for the future, all experience becomes useless and can give rise to no inference or conclusion. [Emphasis added]
The second sentence expresses the single premise of this subsidiary argument, while the first sentence expresses premise (1) of Hume's core argument. Two questions:
(i) Is the premise of this subsidiary argument true?
(ii) Does premise (1) of Hume's central argument follow from it?