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The Problem of Induction

The second of Hume's influential causal arguments is known as the problem of induction, a skeptical argument that utilizes Hume's insights about experience limiting our causal knowledge to constant conjunction. Though Hume gives a quick version of the Problem in the middle of his discussion of causation in the *Treatise* , it is laid out most clearly in Section IV of the *Enquiry*. An influential argument, the Problem's skeptical conclusions have had a drastic impact on the field of epistemology. It should be noted, however, that not everyone agrees about what exactly the Problem consists in. Briefly, the typified version of the Problem as arguing for inductive skepticism can be described as follows:
Recall that proper reasoning involves only relations of ideas and matters of fact. Again, the key differentia distinguishing the two categories of knowledge is that asserting the negation of a true relation of ideas is to assert a contradiction, but this is not the case with genuine matters of fact. But in Section IV, Hume only pursues the justification for matters of fact, of which there are two categories:

(A) Reports of direct experience, both past and present

(B) Claims about states of affairs not directly observed

Matters of fact of category (A) would include sensory experience and memory, against which Hume never raises doubts, contra René Descartes. For Hume, (B) would include both predictions and the laws of nature upon which predictions rest. We cannot claim direct experience of predictions or of general laws, but knowledge of them must still be classified as matters of fact, since both they and their negations remain conceivable. In considering the foundations for predictions, however, we must remember that, for Hume, only the relation of cause and effect gives us predictive power, as it alone allows us to go beyond memory and the senses. All such predictions must therefore involve causality and must therefore be of category (B). But what justifies them?

It seems to be the laws governing cause and effect that provide support for predictions, as human reason tries to reduce particular natural phenomena "...to a greater simplicity, and to resolve the many particular effects into a few general causes...." But this simply sets back the question, for we must now wonder what justifies these "general causes." One possible answer is that they are justified *a priori* as relations of ideas. Hume rejects this solution for two reasons: First, as shown

above, we cannot meditate purely on the idea of a cause and deduce the corresponding effect and, more importantly, to assert the negation of any causal law is not to assert a contradiction.

Here we should pause to note that the generation of the Problem of Induction seems to essentially involve Hume's insights about necessary connection (and hence our treating it first). Since the Problem of Induction demands that causal connections cannot be known *a priori*, and that our access is only to constant conjunction, the Problem seems to require the most crucial components of his account of necessity. It is therefore an oddity that, in the *Enquiry*, Hume waits until Section VII to explicate an account of necessity already utilized in the Problem of Section IV. In the *Treatise*, however, a version of the Problem appears after Hume's insights about experience limiting causation to constant conjunction but before the explication of the projectivist necessity and his presenting of the two definitions. It is therefore not entirely clear how Hume views the relationship between his account of necessity and the Problem. Stathis Psillos, for instance, views Hume's inductive skepticism as a corollary to his account of necessary connection. (Psillos 2002: 31) However, Peter Millican rightly points out that the Problem can still be construed so as to challenge most non-reductive causal theories as well. Kenneth Clatterbaugh goes further, arguing that Hume's reductive account of causation and the skepticism the Problem raises can be parsed out so they are entirely separable.

D.M. Armstrong disagrees, arguing that "…if laws of nature are nothing but Humean uniformities, then inductive scepticism is inevitable."

Whether the Problem of induction is in fact separable from Hume's account of necessary connection, he himself connects the two by arguing 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." Here, Hume invokes the account of causation explicated above to show that the necessity supporting (B) is grounded in our observation of constant conjunction. This is to say that (B) is grounded in (A). But again, (A) by itself gives us no predictive power. We have thus merely pushed the question back one more step and must now ask with Hume, "*What is the foundation of all conclusions from experience?*"

The answer to this question seems to be inductive reasoning. We use direct observation to draw conclusions about unobserved states of affairs. But this is just to once more assert that (B) is grounded in (A). The more interesting question therefore becomes *how* we do this. What lets us reason from (A) to (B)? The only apparent answer is the assumption of some version of the Principle of the Uniformity of Nature (PUN), the doctrine that nature is always uniform, so unobserved instances of phenomena will resemble the observed. This is called an assumption since we have not, as yet, established that we are justified in holding such a principle. Once more, it cannot be known *a priori*, as we assert no contradiction by maintaining its falsity. A sporadic, random universe is perfectly conceivable. Therefore, knowledge of the PUN must be a matter of fact. But the principle is predictive and not directly observed. This means that the PUN is an instance of (B), but we were invoking the PUN as the grounds for moving from beliefs of type (A) to beliefs of type (B), thus creating a vicious circle when attempting to justify type (B) matters of fact. We use knowledge of (B) as a justification

for our knowledge of (B). The bottom line for Hume's Problem of induction seems to be that there is no clear way to rationally justify any causal reasoning (and therefore no inductive inference) whatsoever. We have no ground that allows us to move from (A) to (B), to move beyond sensation and memory, so any matter of fact knowledge beyond these becomes suspect.
Louis Loeb calls this reconstruction of Hume targeting the justification of causal inference-based reasoning the "traditional interpretation" , and Hume's conclusion that causal inferences have "no just foundation" lends support to this interpretation. Under this reconstruction, the epistemic circularity revealed by Hume's Problem of Induction seems detrimental to knowledge. However, there are philosophers that, while agreeing that Hume targets the justification of inductive inference, insist that this particular justificatory circle is not vicious or that it is unproblematic for various reasons. As discussed below, Hume may be one such philosopher. Alternatively, there are those that think that Hume claims too much in insisting that inductive arguments fail to lend probability to their conclusions. D. C. Stove maintains that, while Hume argues that inductive inference never adds probability to its conclusion, Hume's premises actually only support "inductive fallibilism", a much weaker position that induction can never attain certainty (that is, that the inferences are never valid). Hume illicitly adds that no invalid argument can still be reasonable.

But not all are in agreement that Hume's intended target is the justification of causal or inductive inference. Tom Beauchamp and Alexander Rosenberg agree that Hume's argument implies inductive fallibilism, but hold that this position is adopted intentionally as a critique of the deductivist rationalism of Hume's time. Annette Baier defends a similar account, focusing on Hume's use of "reason" in the argument, which she insists should be used only in the narrow sense of Hume's "demonstrative sciences". More recently, Don Garret has argued that Hume's negative conclusion is one of cognitive psychology, that we do not adopt induction based on doxastically sufficient argumentation. Induction is simply not supported by argument, good or bad. Instead, it is an instinctive mechanism that we share with animals. Similarly, David Owen holds that Hume's Problem of induction is not an argument against the reasonableness of inductive inference, but, "Rather Hume is arguing that reason cannot explain how we come to have beliefs in the unobserved on the basis of past experience." We see that there are a variety of interpretations of Hume's Problem of induction and, as we will see below, how we interpret the Problem will inform how we interpret his ultimate causal position.