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Section 6: Probability and Induction

The Pseudo-Problem of Induction

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As much effort as has been expended in attempting to solve Hume's traditional "Problem of Induction" has also been spent by those skeptics who wish to keep Hume's problem exactly that – a problem. This brief paper is presented with the aim of outlining how one may find a solution to the problem as traditionally conceived.

Essentially, the so-called "Problem of Induction" may be stated as follows:

> *There is no reason to suppose that examined instances of certain associated attributes can be used to justifiably infer a similar association of attributes in unexamined instances.*

The key terms of this statement of the Problem are 'justify', 'infer', and 'reason'. The analysis of these terms will evidence the futility of non-linguistic methods of approaching the problem.

'Justification', as Black has observed, is a relational notion. Specifically, to justify a particular inference is to call that inference into question in terms of a rule which dictates how moves of inference in this case are to be made. All particular inferences can be adjudged as to their soundness with reference to the rules of inference justifying them.

Particular inferences are not immune to justification. Since alternative inductive inferences must be rationally decided upon in cases of specific applications, there must be a rule or standard by which to justify the use of one inductive method over another. This negatively aforementioned rule may be considered the *Principle of Induction*. But can this Principle be itself subject to justification? No.

First, only when the Principle has shown to be unsatisfactory need it be called upon to be justified. But if it is unsatisfactory, there must be some further standard by which to judge it as unsatisfactory. That standard cannot be deductive without contradiction, nor can it be inductive

without circularity. Only a contra-inductive Principle can be used to support a claim as to the unreliability of the Inductive Principle. But then we find contra-inductive policies dependent upon hierarchically greater or more encompassing inductive policies. Arguments based on contra-induction that have been advanced against the Principle thus appear to be ill-founded.

One further claim may be raised against the Principle. Obviously the Principle of Induction has proved to be in error a number of times in the past when predicting that, for instance, the future occurrence of a particular set of associated attributes will most of the time resemble, in appropriate circumstances, past occurrences of a similar set of associated attributes. If these negative cases are used to support a contention that the Principle cannot be trusted, an appropriate retort may be made claiming the very disputed Principle itself as the ground of criticism. Only inductive methodology provides that past failure or errors in prediction give evidence for future failures or errors. Predictive guarantee can only be formulated in probabilistic terms − not deductive. Error is inherent to the inductive system; the goal is to minimize the range of this error.

What remains, then, is a Principle of Induction that is the ground of non-deductive inferences. It needs not itself be justified since it intrinsically violates no further relevant rules or principles. The tests for inductive accountability, although valuable for specific applications, cannot, by their very nature be used against the global Principle itself. It is on this point that recent criticisms of the linguistic approach have failed in their attempt to show the approach weak.

As a consequence, the traditional Problem of Induction is a mere pseudo-problem. The numerous pragmatic vindications, a priori and deductive defenses, and inductive ;justifications that have been advanced to support a justification of induction in general are irrelevant as to the nature of a general Principle of Induction itself. However, they have served well as tests for the inductive adequacy of specific applications of inductive reasoning.

REFERENCE TO PAPER IN PROCEEDINGS

A. Uyemov, Demonstrative and Heuristic Aspects in the Logical Modeling of Science in Suppes, P, (ed) 1973, *Logic, Methodology and Philosophy of Science IV. Volume 74*, Elsevier. p 411.

"But what is the way of grounding induction itself? There are many books devoted to the problem of justification and vindication of induction The names of J.S. Mill, J.M Keynes, Nicod, Reichenbach, Black, Salmon, etc,, can be mentioned in this connection There is the opinion that this problem is a pseudoproblem (Strawson) But I agree with Mr. Hilbe, whose report has been presented at our Congress, that the problem is a real one. "

My response.
I did not claim that the Problem of Induction is really a problem, but specifically that it is not a problem. The general Principle of Induction is the basis upon which specific instances of inductive reasoning are based. Its origin rests in the way our brains interpret natural events.