

## David Hume's 'Epistemic Polis' on Causality and Its Impact on the Problem of Induction in Scientific Methodology

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### ABSTRACT

The problem of induction has been lauded as a veritable tool of science which has come under critical rebuttals in recent times. Similarly, philosophers, more than scientists have been embroiled with the problem with the calculated effort to broker a solution. Unfortunately, this is not to be. Through the method of critical analysis, the present inquiry tenders the scientific problem of induction is synonymous with the perennial problems of philosophy which are metaphysical in nature. To make our point, this study explores the epistemology of David Hume and his skeptical conclusion on causation to draw the parallel with the scientific problem of induction. It is therefore the position of the present study that metaphysical problems, since they defy finality, wherever they are deployed and employed, the flaws and shortcomings already cited will necessarily extend to vitiate the extent of applicability.

**Keywords:** Causation, David Hume, Induction, Metaphysics, Scientific Methodology

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### INTRODUCTION

Originally a metaphysical discourse that goes as far back as Aristotle, the problem of causation continues to be one of the perennial questions that seems to have not been solved conclusively [1]. Even when it has been lauded as one of the foremost inferences from whence the scientific problem of induction leaps, it is important to account for the role of David Hume's skeptical approach to causality. Consequent of the foregoing observation, it is the task of this paper to give an overview of the thoughts of David Hume on the notion of causation and similar reflections on his epistemology before providing the connection with the idea of inductive inference which scientist are very mindful about. In other words, the primary aim is to regurgitate the place of inductive inferences as it derives from David Hume's treatment of causation. After giving an overview of the arguments of Hume regarding the notion of causation, it is the task of this work to then be presented with the relationship between this construction and implications it has on science. **An Exploration of the 'Epistemic Polis' of David Hume:** We say epistemic polis

because for all the arguments marshaled by David Hume in his magnum opus *An Enquiry Concerning Human Understanding*, he took the skeptical conclusion. It is this skeptical conclusion that informs the ascription of his 'Epistemic Polis'. Perhaps to expatiate on our choice of nomenclature, it would be helpful to begin with a brief exploration of skepticism as a doctrine in epistemology. Skepticism, for us, is one of the tools of philosophising as it erodes all barricades of dogmatism in a systematic manner. Skepticism, in the words of Huemer "is the position that it is impossible to know anything about the external world at all" [2]. Elsewhere, Nigel Warburton [3] holds scepticism to mean, the idea that we cannot know for sure that we know. In other words, one of the central definitions of skepticism is the incessant doubt as to whether or not an idea or proposition may be true. It is also important to note that there are usually two variants of skepticism: absolute scepticism and limited scepticism [4]. The one, being the most extreme and the other is limited but also known as external world scepticism. Whereas the

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former claims nobody knows anything at all, the latter seems to hold a fallibilistic outlook - no idea is immune to error [5]. These forms of scepticism have been employed overtime by philosophers and sceptics. Of these two forms of skepticism, we surrender that David Hume is a limited skeptic, one who persistently takes a position that underscores the aim of fallibilism. According to Baron Reed, "Fallibilism is the philosophical view that conjoins two apparently obvious claims. On one hand, we are fallible. We make mistakes - sometimes even about the most evident things. But, on the other hand, we also have quite a bit of knowledge. Despite our tendency to get things wrong occasionally, we get it right much more of the time" [6]. This is the intellectual spirit that David Hume deploys to all aspects of his intellectual inquiry. With regards to perception, Hume takes an approach termed "indirect realism" [7]. He seems to hold that we are never directly in perception of objects but their images in our minds which he termed as impressions. In his own words: "[t]he existences, which we consider, when we say *this house* and *that tree*, are nothing but perceptions or representations in the

mind, and fleeting copies or representations of other existences, which remain uniform and independent" [8]. David Hume castigates any belief in miracles. For him, "no miracle in history has in fact been sufficiently well attested by sufficiently many reliable witnesses" [9]. "Secondly, the pleasant passion of surprise and wonder makes miracle stories particularly prone to invention and fantasy, all the more so if they are propagated to promote religion" [10]. As the history of forged miracles amply demonstrates, a religious person may lie 'for the sake of promoting so holy a cause', or out of vanity, or he may be gullible or swayed by eloquence (since many renounce their reason in questions of religion)". "Thirdly, miracle stories almost all 'abound amongst ignorant and barbarous nations', suggesting that they are indeed products of imagination rather than provable fact [11]". "Finally, if a miracle is supposed to establish the religion (or sect) to which it is attributed, and since the various religions are incompatible, it follows that the evidence for any miracle will be opposed by the evidence in favour of the far greater number of miracles reported in other religions". He harps further:

That no testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous, than the fact, which it endeavours to establish: And even in that case there is a mutual destruction of arguments, and the superior only gives us an assurance suitable to that degree of force, which remains, after deducting the inferior."\* When any one tells me, that he saw a dead man restored to life, I immediately consider with myself, whether it be more probable, that this person should either deceive or be deceived, or that the fact, which he relates, should really have happened. I weigh the one miracle against the other; and according to the superiority, which I discover, I pronounce my decision, and always reject the greater miracle. If the falsehood of his testimony would be more miraculous, than the event which he relates; then, and not till then, can he pretend to command my belief or opinion [12].

On the immortality of the human soul, Hume commits to show that one cannot substantiate such belief with any serious

evidence. This is a carry-over of his dose in the Section VI "Of Probability" in his *Enquiry*. There he announces:

A wise man, therefore, proportions his belief to the evidence. . . . All probability, then, supposes an opposition of experiments and observations, where the one side is found to overbalance the other, and to produce a degree of evidence, proportioned to the superiority [12].

Hume argues against the metaphysical topics, the moral and physical argument customarily employed to justify belief in the immortality of the human soul. We can see how the spirit of skepticism, the epistemic polis plays itself in the thoughts of Hume. In the section that follows we shall now give a critical exposition to the Hume on Causation.

**David Hume and the Skeptical Conclusion on Causation:** This essay holds to the principle that David Hume's treatment on causation has a relation to induction. Science as a theoretical and practical enterprise makes use of the idea of inductive inferences when making predictions about some future possibilities. Taking our cue from David Hume, this paper maintains that it would be tantamount to sheer ignorance if we maintain that there is no association between the conclusions of David Hume on causation and how philosophers and scientists have thought about the problem of induction. In this connection, this essay investigates the idea of causation and how Hume was led to the belief that our conclusions that a particular event has a prior cause in another event. He concluded that our beliefs of causation are merely by habit. In other words our idea of causation have overt implications on the fact that when we see that the sun has been rising for the past ten billion years, we are strongly justified in the belief that the sun shall rise tomorrow. Hume says that we cannot place this on necessity and concludes if we can actually have idea of the causal (or in this case induction) link among the planetary bodies. How did Hume construe his arguments? What is causality in the idea of Hume? What is inductive inference and how is it being employed in scientific theorizing? These are the questions that we contend with for the remainder of this

inquiry [13]. Hume had been influenced by the empiricism of Thomas Hobbes and John Locke before him [14]. Hume was however, displeased with the notion of causation and how humans are quick too often to infer that every even must have a cause. This is exactly the point that Hume's skeptical conclusion is always directed at. It must be stated from the onset that David Hume was a thorough going empiricist who ended up with skepticism. David Hume was primarily against the idea that things that happen must have a cause, and if this is the case an effect usually follows the cause. As shown in the above, David Hume concludes skeptically if we can ever really know that a particular event it traceable to a particular cause. In other words, we cannot induct that a particular event has a sole cause. This has been termed the problem of induction. In the words of [14]: "the problem of induction is the problem of justifying the belief that the unobserved resembles the observed." How did he arrive at this skeptical conclusion? This question shall occupy the attention of this essay shortly. David Hume made use of many examples but the most famous, which this essay shall employ is the billiard ball instance. Suppose that we have one billiard ball lying at rest on the table, and another moving rapidly towards it. They collide. It's logical, isn't it, for the one at rest to start moving as a result of the collision? Well, no, he says, it's easy to imagine that the one at rest remains in that state, while the other ball returns in the direction from which it came [12]. In this example, Hume invites his readers to imagine a case of one ball at rest and another that is in motion which collides with the former. We have by experience been led to think that as a result of the collision the former ball should start moving. Why do we

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believe that one ball is the cause of another's motion? Hume answers that it is habit and doubt if we can ever locate the cause. Hume, in section VII titled 'Of the

Idea of Necessary Connexion' in *An Enquiry Concerning Human Understanding*, avers:

When we look about us towards external objects, and consider the operation of causes, we are never able, in a single instance, to discover any power or necessary connexion; any quality, which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find, that the one does actually, in fact, follow the other. The impulse of one billiard-ball is attended with motion in the second. This is the whole that appears to the outward senses. The mind feels no sentiment or inward impression\* from this succession of objects: Consequently, there is not, in any single, particular instance of cause and effect, anything which can suggest the idea of power or necessary connexion [12].

Hume examines two perspectives to evince his position. First, he searched for logical relations between cause and effect. Hume realized that it would be impossible to construe an effect logically from a cause since other possible causes are conceivable without contradiction. For instance, let us assume that a sleeper sets an alarm for 4 P.M. and exactly this period a large thunder clap sounded, bringing the sleeper to life. Hume invites us to ask which is actually the cause (alarm or thunder clap) of the effect (waking state of sleeper). Hume with this logic claims that we cannot ascertain which the real cause is as one cannot be ruled out by another. This implies that "cause and effect are not logical relations" [13]. But is there physical relations? Hume knocks off this possibility too.

The second possibility that Hume explores is a physical relation. He believes that when a cause and effect happens, there are three physical or factual relations that are observable:

- Cause appears before effect;
- Contiguity or close proximity in space and time; and
- Constant Conjunction producing similar results in other similar cases.

Hume thereby concludes that beyond these three, he cannot observe what actually caused an activity. In his own words, Hume testifies: "Beyond these three circumstances of contiguity, priority and constant conjunction, I can discover nothing in this cause" [14]. His proposal may be summed up thus:

If we look for the origin of the idea of causation, Hume says, we find that it cannot be any particular inherent quality of objects; for objects of the most different kinds can be causes and effects. We must look instead for relationships between objects. We find, indeed, that causes and effects must be contiguous to each other, and that causes must be prior to their effects. But this is not enough: we feel that there must be a necessary connection between cause and effect, though the nature of this connection is difficult to establish [12].

Hume adds that the constant conjunction, which reveals nothing about the causal relations in the physical situation, has an influence on our minds. If we observe the

same pattern of billiard-ball collisions several times, we come to expect the pattern to be repeated. When we see the collision, "habit" - Hume's term - leads us

to expect motion to occur in the ball initially at rest. Notice, however, that this conclusion puts the connection between cause and effect in the human mind, not in the physical world [13]. From all of the above, it is not surprising that given the inability to locate the necessary connection between events, Hume succeeded to debunk the idea of causation. But this is not where it all ends. His repudiation of the idea of causation has implication for science and induction. But what is induction? This shall be the next task of the work.

**Causation, Inductive Inferences and Scientific Methodology:**

The skeptical notion of causation as concluded by David Hume in the previous section has served as a platform for us to be able to understand him when we begin to give a critical assessment to the correlation it has with inductive inferences. What then is induction? How does it correlate with Hume's topic on causation? What implication has this correlation for the progress and development of the scientific method? These are the questions that we contend with within the pages ahead. The first point to note is that induction is a form of inference in logical reflection. Huemer in his 2002 work *Epistemology: Contemporary Readings*, takes a look at the different kind of inferences that we have that are mistakenly taken for induction or inductive inferences. Traditionally, there are two kinds of inference, deductive and inductive. Unfortunately, there are at least two uses of "induction" which are commonly confused with each other [12]. There is the assumption that non-deductive inferences are similar to inductive inferences but this is incorrect. To avoid confusion, it is best to adopt the following definitions: *Deductive inference*: A kind of reasoning in which the premises purportedly entail the conclusion; that is, support the conclusion in such a way that it would be impossible for the premises to be true and the conclusion to be false. *Non-deductive inference*: A kind of reasoning in which the premises

purportedly support the conclusion without entailing it; that is, support the conclusion in such a way that if the premises are true, it is more likely (but not necessary) that the conclusion is true. *Inductive inference*: A species of non-deductive reasoning in which the conclusion generalizes on the information given in the premises. Example: the inference from "All observed ravens have been black" to "All ravens are black" is inductive. Likewise for the inference, "The sun has risen every day in the past; therefore, the sun will rise tomorrow." "Inductive inference" is also sometimes used to mean merely "non-deductive inference," but this is not true [11]. The definitions alone already attests to this difference. From the above, it is already clear and evident that scientists use the inductive inference and it cannot be denied that most of them are aware of the flaws and limitations highlighted by David Hume's earlier caution or caveat regarding the idea of necessary connection between events. How does this work? This is the principal motivation of the present section. Perhaps the starting point is to articulate the meaning of scientific method.

In the words of [11] that the "essence [of] scientific method is simply the pursuit of truth as determined by logical considerations." This is the general understanding of the term 'scientific method.' However, when examined from the philosophical perspective it has come to the understanding that "it refers to an attitude to the mind. It refers to the sense of rigour, rationality, objectivity, thoroughness, incisiveness (or detail), logic, consistence, coherence, with which their inquiry is carried out" [13]. It is however instructive to understand that the scientific method explores the method of deduction and induction. Whereas both are adequately explored, Francis [1], reflects "...while induction is the hallmark of science, deduction is regarded as the hallmark of logic." In this discourse however, we content ourselves with the method of induction, for the sake of

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showing that the problem highlighted by Hume continues albeit subtly to gird the scientists. Much as the method of induction is replete for scientific use and the codification of ideas about the world, it is worth stressing that the scientists have yet to or failed to articulate the implied problem that induction admits. In other words, scientists have failed to give the method of induction critical and serious examination. It is assumed hook line and sinker that the method is fool proof. However, it is the business of the philosopher to point out these problems, hence the need to link the problem with one of the perennial problem of philosophy - causality. As had been hinted hitherto, scientists reason from the unobserved to the observed. In other words, there is no reason to believe that, for Hume, even the scientists are correct. There is no reason to deny that the problem of induction still haunt scientists till posterity. After the process of observing phenomena and collection of

data to analyze the things examined, the next task is to use this data to make predictions [5]. These predictions, Hume questions, if there is any logical connection between them and the inference that is being made about them such that it is necessary that what has been predicted and inferred would be the case. Scientists themselves have a hard time trying to figure out how this actually works and this is why it is obvious that even they cannot ascertain to the origin and necessity in this connection. Science, regrettably is yet to answer this question which is also tied to the Humean causation skeptical conclusion. This is why Karl Raimund Popper gives this problem a critical exposition in his *Conjecture and Refutations*. In spite of announcing that he has solved the problem of induction, it is the case that the problem of induction which had been informed by the problem of causality which goes as far back as David Hume.

#### CONCLUSION

This paper has been able to make a very concise relation between the problem that David Hume noticed in causation and the problem that scientists face in the contemporary world - the problem of induction. The problem of induction has been haunting scientists. Eversince the problem of causation has been cited by David Hume, several centuries ago. This essay is of the view that science, has streamlined herself to some specific procedures that she must actually go through and must not digress because if any scientists claims to have reached a

breakthrough, it is expected that such a breakthrough should be something they should be able to communicate to others with this procedure. The problem of induction, in the opinion of this essay, is bungled up in the scientific procedure. It is the reasoning of this work that one must pay a critical attention to the notion of causation which is implied in induction that haunts philosophers and science even till posterity. Hume's problem therefore seems to be one that shall be with us for a long time.

#### REFERENCES

1. Beebee, H., (2011) "David Hume." In S. Biernecker and D. Pritchard (eds.) *The Routledge Companion to Epistemology*, London: Routledge.
2. Cohen, M., Nagel, E., (1978). *An Introduction to Logic and Scientific Method*. London: Routledge.
3. Hospers, J., (1999) *Philosophical Analysis: An Introduction*, London: Routledge.
4. Huemer, M., (ed.) (2001) *Epistemology: Contemporary Readings*. London: Routledge.
5. Huemer, M., (2001) *Scepticism and the Veil of Perception*, Maryland:

6. Hume, D., (2007) *An Enquiry Concerning Human Understanding*, with Introduction by Peter Millican. Oxford: Oxford University Press.
7. Hume, D., (1886), *A Treatise of Human Nature* in *The Philosophical Works*. T.H. Green and T.H. Grose (ed.), vol. 1 London.
8. Kanu, M.A. (2015). "The Limitations of Science: A Philosophical Critique of Scientific Method." *Journal of Humanities and Social Science*. 20 (7): 77-87
9. Kenny, A. (2006) *An Illustrated Brief History of Western Philosophy*, New York: Blackwell Publishing Ltd.
10. Ofuasia, E. (2017). "On the Dearth of God in Aristotle's Substance Metaphysics: A Process-Relational Riposte." *Philosophia: E-Journal of Philosophy and Culture*. 15: 145-161
11. Reed, B. (2002) "How to Think about Fallibilism" in *Philosophical Studies*, Netherlands, Kluwer Academic Publishers.
12. Salmon, W.C., (2002) 'Causation.' In R.M. Gale (ed.) *The Blackwell Guide to Metaphysics*. New York: Blackwell Publishing Ltd.
13. Uduigwomen, A.F. (1996). *History and Philosophy of Science*. Aba: A.A.U Industries.
14. Warburton, N., (1999) *Philosophy: The Basics*, London: Routledge.