Can induction be justified?

There are two levels of justification of induction: **epistemic justification,** meaning rational reasoning that proves induction works, and **pragmatic justification** that justifies the action of using induction regardless of whether induction itself is rational. David Hume famously denies any rational epistemic justification of inductive inference, which, he believes, is based on an ungrounded belief in the Uniformity of nature. In this essay I will argue that Hume is right in saying that it is not possible to provide any epistemic justification of induction, but it remains justifiable for us to continue using induction based on a pragmatic account.

Argument 1

Inductive reasoning and the pursuit of knowledge are fundamentally based on the assumption of Uniformity. This assumption, however, can never be epistemically justified.

According to Hume, there are four kinds of evidence to justify a belief – **self-evidence, sensory experience, deductive reasoning and inductive reasoning.** Self-evidence or sensory experience obviously do not apply; deductive reasoning works better disproving rationality of induction – by highlighting counter-examples – than proving it. Inductive reasoning inevitably leads us to the trap of circular argument, because we have no way to justify such reasoning without turning to induction itself as our resort. It naturally follows that there is no rational basis for inductive inference.

Attempts to attack this argument have either 'cheated' by circumventing the epistemic scepticism or inevitably turned out as circular.

Max Black argued that induction can be justified inductively without vicious circularity, by distinguishing between a 1st level 'inductive rule' and a 2nd level 'inductive argument' which relies on the 'reliability' of the inductive rule. He argues that induction at the 2nd level is distinct from that at the 1st level, and thus circularity is avoided. But it is not. To claim that a non-deductive rule is "reliable" is to imply that it will probably be successful in the next instance of its use, and it is where induction again comes in.

Hume's argument therefore remains unassailable – neither intuition, nor sensation, nor deduction, nor induction itself can ground inductive reasoning, and together they exhaust all the possible ways we may use for an epistemic justification.

Argument 2

The Reliabilists try to dissolve the problem by arguing that knowledge generation does not need justification for induction: "If S's believing p at t results from a reliable cognitive belief-forming process, then S's belief in p at t is knowledge."(Goldman) Here a reliable belief-forming process is one which generally produces true beliefs. This essentially means that one can have knowledge without knowing one is justified.

However, not only haven't the Reliabilists directly answer epistemic scepticism or provide a clearly non-inductive definition of 'reliability'**, their attempt to dissolve the question is also unsuccessful. As Robert Brandom points out, as the definition of 'belief' in Reliabilists' argument is vague, Reliabilism may attribute knowledge to things that would otherwise be considered incapable of possessing it; and I would add that this may include human.**

For example, a parrot can be trained using treats to consistently respond to the question "1+1" by saying 'it's 2'. The proposition is true, the mechanism is reliable, but does parrot 'know' the answer? Obviously not. Its action is only a response to a stimulus rather than a belief. Similarly, we humans are also 'reliably' positioned to 'respond' to consistent past observations by thinking that the future will resemble the past. The 'treats' we get are correspondingly our successful track record of using induction. How can we distinguish induction as a human 'response' from the parrot's trained response

and to say it leads a kind of belief that leads to knowledge? **There is a link missing in both cases: knowledge must pertain to concepts; concepts are products of 'the game of giving and asking for reasons'(Wilfrid Sellars), which corresponds to either epistemic or pragmatic justification here.** If the parrot does not acquire knowledge without understanding maths, neither do humans using induction without justification.

Therefore, justifying induction is still crucial to generating knowledge. The Reliabilists are wrong.

Argument 3

As it is impossible to dismiss the problem or provide any epistemic justification, pragmatic justification is our only resort, and I would argue that the pragmatic solution does provide satisfactory support to the use of induction.

According to **Reichenbach**, if there is any general rule to be found, then induction will find it, and is better than any alternative method. Even where induction does not apply, using induction will at least tell us that fact. For Reichenbach, it is like a physician telling his patient, “I do not know whether an operation will save you, but if there is any remedy, it is an operation”. This does provide some justification for operating on the man, even if one does not know that the operation will succeed, similar to using induction as the only way for possible knowledge generation.

One possible objection is that this argument assumes ‘there is no cost to trying.’ In his idealised situation, the patient ‘has everything to gain and nothing to lose’ by cutting open his abdomen. But if there is significant cost, it may not be clear what the most rational course of action would be. However, this argument does not invalidate the pragmatic solution in the context of knowledge generation and sciences, where the benefits of using induction have consistently outweighed the cost by far, and by Reichenbach’s reasoning, we have good (pragmatic) reasons to believe it will continue to be the case. Hence the pragmatic justification remains valid.

Conclusion

In conclusion, induction has proved to be so central to knowledge generation that the problem of induction can never be dismissed. However, it is an unrealistic whim to provide an epistemic justification for it. Perhaps the uniformity principle does happen to hold in this world, and all the worries the philosophers have are actually unnecessary; but we will never know – the ‘truth’ will always be out of the reach of our senses and rational reasoning. The only sensible thing to do is to accept induction as the best and only strategy we have so far, because if there are indeed chances of discovery of knowledge, the hope would always lie within the power of induction.