[This is the penultimate pre-publication version of this article.]

"I shall not be impressed…"

Quine on induction and evolution in 'Natural Kinds'

I. Introduction

Willard van Orman Quine was a highly influential proponent of naturalized epistemology. He is well-known for his suggestion that epistemology might fall "into place as a chapter of psychology" (1969a, p. 82). But I am interested here in something that Quine says about the relationship between epistemology and another area of science. In his paper 'Natural Kinds' (1969b), Quine suggests that Darwin's evolutionary theory may provide reason for confidence in the reliability of inductive inference.[1]

The appeal to Darwin gives rise to a sceptical concern about the circularity of using inductively established science to justify induction. Quine recognizes this concern and dismisses it rather abruptly. The basis of that dismissal remains unclear to this day. My goal here is to tease out the basis for that dismissal in a way that draws on what Quine himself says by way of explanation.

[1] In describing Quine's view, I sometimes find it natural to use the expressions 'reliable' or 'reliability'. I do not intend thereby to suggest that Quine is to be understood as endorsing a reliabilist epistemology in the technical sense that involves an externalist rather than an internalist conception of warrant. I intend to employ such expressions in the naïve sense that on the whole our use of induction tends to lead to true conclusions a great deal of the time.

II. Quality spacing and induction

In 'Natural Kinds', Quine takes recognition of similarity to lie at the heart of our use of induction.[2] For Quine, we recognize similarities between properties that we perceive in the world. These similarities are aligned with natural kinds in such a way that our inductive inferences relating to those kinds are highly reliable. The expectations that we form that future members of a kind will have properties similar to those of previously observed members of the kind tend to be correct. In effect, such expectations stem from inductive predictions based on projection into the future of previously observed similarities.

Quine wonders why it is that recognition of similarities in nature gives rise to reliable induction:

> There is some encouragement in Darwin. If people's innate spacing of qualities is a gene-linked trait, then the spacing that has made for the most successful inductions will have tended to predominate through natural selection. Creatures inveterately wrong in their inductions have a pathetic but praiseworthy tendency to die before reproducing their kind. (1969b, p. 126)

What Quine means by the "innate subjective spacing of qualities" is our inbuilt ability to recognize similarities in our experiences of the world. We have, Quine thinks, an innate

[2] In fact, Quine introduces the notion of similarity as a means of elucidating Goodman's notion of a projectible predicate (1969b, p. 116). But I shall leave Goodman's problem of the grue emeralds out of the story here. My interest here is in "the old problem of induction".

capacity to group things together on the basis that they share the same or similar qualities or properties.[3] For example, we group yellow items together with other yellow items on the basis of their being yellow. We distinguish yellow items from non-yellow items on the basis that the latter are not yellow.

For the most part, our use of induction is successful. It regularly leads to correct claims about the world. The key to our successful use of induction is that in fact we correctly identify genuine similarities in the world. We have a capacity to recognize similarities that exist between items belonging to the same kind. We recognize "functionally relevant groupings in nature" (Quine 1969b, p. 126). It is precisely because we recognize such groupings or kinds on the basis of similarity that our inductions prove so often to be correct.

The question Quine raises is why it is that our subjective similarity spacings latch onto genuine similarities in nature in a manner that promotes successful inductive inference. Why do subjective similarity spacings enable successful induction? As may be seen in the quotation above, this is where Quine's appeal to Darwin enters the picture. The suggestion is that the success of our similarity-based inductive inference may be explained in terms of evolution by natural selection. We have inherited from our ancestors an innate capacity to recognize similarities between items encountered in our experience of the world. Our utilization of this capacity is what enables inductive inferences about further such items to succeed.[4]

III. Evolutionary explanation and circularity

[3] The capacity must be innate at least in a rudimentary sense. For otherwise it would be impossible to learn anything. (Cf. Quine 1969b, p. 123.)

[4] In a well-known critical discussion of Quine-style appeals to evolution, Stephen Stich argues that there is no reason to assume that evolution produces optimal cognitive systems (1990). My concern here is not with whether Quine's appeal to Darwin is compelling. My concern is with his abrupt dismissal of the sceptic's circularity objection.

Here, in rough terms, is the way the explanation proceeds. Inductive reasoning plays a crucial role in our interaction with the world that we inhabit. We employ induction to form beliefs about the world. We act on the basis of those beliefs. Our success in such action is what determines whether we survive.

The fact that we as a species have survived indicates that our use of induction is reliable. If we were poor inductive reasoners, our species would not have survived. If our subjective similarity spacings did not correctly map the world, we would not be here. But we are here. We have survived. So, we must be good at induction.

There may, of course, be other explanations for our survival. The fact that we as a species have survived does not entail that we are good at induction. We might be poor inductive reasoners who routinely arrive at erroneous conclusions. Our survival might be due to another circumstance than being good at induction. Life on Earth might be so easy that we survive despite being poor inductive reasoners. We might have inherited physical traits that endow us with a survival-promoting advantage in the environmental niche that we occupy. Or perhaps a Lewisian fink steps in to make the world comply when we draw mistaken inductive conclusions.

But, apart from the *non sequitur*, there is a fundamental problem with Quine's appeal to evolution. On the one hand, the theory of evolution is itself based on inductive inference from empirical evidence. On the other hand, our use of inductive inference is justified by appeal to the theory of evolution. Quine's appeal to evolution therefore employs induction to justify induction. But to use induction to justify induction is to argue in a circle. It is to use

induction to justify itself. Quine's Darwinian justification of induction fails to be a satisfactory justification of induction owing to its circularity.[5]

IV. Survival and Neurath's boat

Quine recognizes the circularity but sees little cause for concern:

> ... I shall not be impressed by protests that I am using inductive generalizations, Darwin's and others, to justify induction, and thus reasoning in a circle … my position is a naturalistic one; I see philosophy not as an *a priori* propaedeutic or groundwork for science, but as continuous with science. I see philosophy and science as in the same boat – a boat which, to revert to Neurath's figure as I so often do, we can rebuild only at sea while staying afloat in it. There is no external vantage point, no first philosophy. All scientific findings, all scientific conjectures that are at present plausible, are therefore in my view welcome for use in philosophy as elsewhere. (1969b, pp. 126-7)

Quine is unimpressed by the charge of circularity. But it is one thing not to be impressed by an objection. It is another to have a reason not to be impressed by it. What is Quine's reason?

The reason that Quine gives for not being impressed by the circularity objection combines elements of his holism and his naturalism. This may be seen from his use of Otto Neurath's metaphor of the boat that must be repaired whilst remaining at sea. Quine does not see philosophy as an *a priori* project to be carried out in advance of commencing to do empirical science. He sees philosophy as being in the same boat as science. For this reason,

[5] It might be denied that Quine intended to justify induction by appealing to Darwin. Indeed, in his (1975, p. 70) this is precisely what he does. But the later denial that he is attempting to justify induction by appeal to Darwin is difficult to reconcile with what he says in (1969b). He does not deny that he is using Darwin to justify induction. Instead, as we are about to see, he claims to be unimpressed by the charge that he is. A natural understanding of this is that Quine recognizes that he is providing a circular justification of induction but is unmoved by the objection.

Quine takes it that philosophy can appeal to any aspect of science in answering its questions. In particular, as we have seen, philosophy may appeal to Darwin's theory of evolution in solving the problem of induction.

But how does being told that philosophy is in the same boat as science explain why one need not be impressed by the charge of circularity? Here it is important to note that Quine's point is not just that philosophy and science are in the same boat. Quine's point is that the boat is actually afloat. The fact that the boat is afloat is evidence of success. As sailors at sea, our efforts to keep the boat afloat have been successful. This indicates that what we are doing to maintain the boat while we are at sea is working. Our ongoing maintenance efforts are successful. This means that we may have full confidence in what we are doing to keep the boat afloat.

The image of the boat at sea is a metaphor. Let us cash it out. The boat is a metaphor for our belief system. Ongoing maintenance of the boat is a metaphor for ongoing maintenance of our belief system. The fact that the boat is afloat shows that we are doing something right with respect to boat maintenance. Similarly for our belief system. The fact that we are here, that we have survived, indicates that we are doing something right with respect to maintenance of our belief system. This means that we may have confidence in our belief system because it continues to provide us with reliable guidance in the world. There is no need for us to adopt an external vantage point on our belief system to know that it is working well. Given our survival, we can work that out from within our belief system.

So, for Quine, the circularity of the justification of induction poses no threat. The boat of our belief system remains afloat. This establishes that we are doing something right. There is no need to adopt an external vantage point from which to show that our belief system is correct. Despite the threat of circularity, we can be confident from within our system of beliefs

that we are doing something right. The appeal to Darwin is circular. But the fact remains that we have survived. That fact is what establishes the reliability of our use of induction.

References

Quine, Willard van Orman (1969a), 'Epistemology Naturalized' in *Ontological Relativity and Other Essays*, Columbia University Press, New York, 1969, pp. 69-90

Quine, Willard van Orman (1969b), 'Natural Kinds', in *Ontological Relativity and Other Essays*, Columbia University Press, New York, 1969, pp. 114-138

Quine, Willard van Orman (1975), 'The Nature of Natural Knowledge', in Samuel Guttenplan (ed.) *Mind and Language*, Oxford University Press, Oxford, pp. 67-81

Stich, Stephen (1990), *The Fragmentation of Reason*, MIT Press, Cambridge, Mass.