

O'Hear's Criticism of Popper's Corroboration as Veiled Induction

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O'Hear [1975] claims that Popper's [1965] rejection of induction makes it difficult for him to: (1) base action on the best tested scientific theory, and (2) even decide that a theory is well tested in the first place. I will attempt a defence of Popper from this charge, as I believe O'Hear has misunderstood several key points in Popper's system.

In judging a theory's worth, Popper's system provides only "corroboration", a measure of past performance. The best corroborated theory is not the one with the most observed examples "racked up" on the scoreboard, so to speak, but is rather the theory that has been most severely tested, but has still survived. O'Hear argues that for Popper to go from this measure of past performance to a recommendation that we act according to the well-corroborated theory would be a leap of faith from past success to a justification for applying the theory in the future... a clear case of inductive reasoning. Yet induction is the very thing that Popper wants to convince us that we do not need.

One might respond that Popper's system is not intended to justify theories, and that in fact Popper does not really see the scientific method as being about the justification of theories in the first place. Popper's method provides science with an epistemic engine for going towards (if not reaching) the truth. But it claims neither to reach the truth, nor to provide some degree of justification for any claims to truth. It claims only to have *eliminated* theories that are *not* true, and then presents us with the so far best-tested unfalsified—but falsifiable—theory. "Best-tested" means that the testing of this theory provided more opportunity for falsification than

other theories tested (naturally, a theory must be falsifiable before such corroboration is possible).

So according to Popper, we need make no stronger claim to truth than to (quite rationally) claim knowledge concerning what is *not* true, along with an understanding of the so-far best-tested *possibly* true alternative to such falsehoods. Since Popper makes no claim to the rational justification of the truth of scientific theories, he also makes no claim to the rational justification of actions based on said theories. Indeed, Popper might argue that science as the *search* for truth, requires no action beyond its own theorizing and testing. When we act we step beyond our theories and make a (perhaps inductive) leap, since we act as instinctive animals living in the world, not as scientists, who need not (*as* scientists) act at all. The answer to O'Hear's objection that Popper needs induction to go beyond corroboration and justify action is that yes, indeed, induction *is* needed—since we do need to act in nonscientific contexts, and we cannot sceptically suspend judgement indefinitely, as one might imagine an ideal scientist would.

But O'Hear, I think, would still not buy this defence of Popper. "What is needed," he says, "and what is absent from Popper's account, is surely a theory that the best-tested theories are generally the most reliable." Perhaps, then, our above defence of Popper overlooks that Popper, while not claiming justification, perhaps *ought* to do so. Rather than a defence of his system, we now have a case against it. After all, why do science at all, why search for truth, if one does not plan to act on what one finds? Surely Popper, in spite of his apparently skeptical tone, does believe in acting on the best-tested theories, and surely as a rational being who believes in the scientific method, he must in some sense feel he is rationally justified in so acting. Yet, says O'Hear, he cannot consistently do this without accepting that falsification is in fact a

kind of induction—and if he does *not* do this, he must give up many of the prime motivations for doing science in the first place.

Yet O'Hear himself admits that to ask this of Popper is to "ask too much", by the lights of Popper's own system. Popper's lack of connection between justification for scientific theories and for action based on them is perfectly allowable if one presumes—as indeed most modern scientists do—that science is an inherently skeptical exercise (I am using the word “skepticism” here in the tradition of the Greek Academic skeptics, as a term implying a continual questioning and revising of one's position, rather than as an extreme position that denies the possibility of any kind of knowledge whatsoever).

O'Hear's response to this is that Popper actually *does* in places admit that he considers following the best-tested theory to be the rational thing to do. O'Hear quotes Popper, from *Objective Knowledge*, as saying that the choice of action based on the best-tested theory is a rational choice even though it is *not* based on “*good reasons* for expecting it will in practice be a successful choice.” So Popper *does* claim (at least in some sense) that scientifically grounded action is rational—he just denies that it provides one with justification for believing that such action will actually be successful. O'Hear seems to think this a rather strange and uncomfortable compromise. After all, “if we did not think that we had grounds for believing that our choice of a theory for action was likely to prove successful, would we be justified in thinking of our choice as a rational choice for a basis for action?”

But this is still not necessarily a problem for Popper. O'Hear is implicitly assuming that for Popper "rational" = "scientific". But there is no contradiction in believing, as Popper seems to, that while scientific choices are rational, not all rational choices are scientific. There is nothing in what Popper says that presumes that a rational choice must be a *rationaly justified*

choice. Science is, in Popper's view, about neither rational justification nor rational action, so why should O'Hear insist not only on holding him to both, but also on requiring that the latter be dependent on the former? Popper instead believes in corroboration (in his own technical sense of the word), not justification, and he thus likewise believes in rational action, but not rationally *justified* action.

O'Hear would presumably still object that Popper cannot uphold this kind of rational action without appealing to justification of some sort, which will turn out to be inductive. The tenability of O'Hear's position, then, rests on whether Popper's account of "corroboration" can be translated into the language of induction—whether it is in some sense induction in disguise. The tenability of Popper's defence against O'Hear's charge rests on his claim that corroboration is a qualitatively different procedure.

At first blow, one can certainly see the attraction of O'Hear's claim—Popper does at times sound like he is just inverting the scientific method, and changing positive words like "verify" and "confirm" into their negative counterparts like "falsify" and "eliminate". One could imagine that this might just be a roundabout way of describing the self-same procedure as an inductive method. Induction builds up a list of how many experiments have provided examples—confirmations or verifications—of a theory, while corroboration builds up a list of how many tests the theory has passed. But is the "passing of a test" not just another way of talking about a "verification"? Perhaps Popper has merely provided a way of deciding what kinds of experiments constitute valid tests, a way of deciding if a test is the sort of test that would provide confirmation if passed. On this view, only tests that could potentially falsify a theory can be considered, if passed, to be valid instances from which to inductively generalize.

But, as O'Hear points out, Popper does *not* consider the passing of many tests (many failures to falsify) as equivalent to a high degree of corroboration. In fact, for any theory there are an infinite number of tests that might falsify it, some more interesting and relevant than others. So the sheer number of passed tests tells us nothing about corroboration. But then where does corroboration come from, if not the number of passed tests, and wherever it does come from, why can we not consider it to be a rational justification if it is rational to follow it as Popper claims?

According to Popper, "a theory is given a high degree of corroboration not by surviving a large number of tests, but by surviving severe tests." [see Popper, p. 267] The "severe" tests are the ones our general background knowledge (itself not necessarily scientifically supported) tells us are the most likely sources of falsification. So this severity measure is dependent on general background knowledge and is not itself (necessarily) rationally *or* inductively determined. It thus cannot be quantified as we imagined the number of tests or number of instances might be. It cannot therefore be considered part of an inductive build-up of instances leading to a generalization. It is inherently different than induction, based on common world knowledge. It is rational because it uses this *nonrational* background knowledge to form and guide a *rational* attempt to eliminate false choices. It thus can be rational without providing any quantifiable degree of rational justification for the best-tested theory.

But O'Hear believes he sees a weak spot in this argument. The results of earlier tests inform the choice of later tests, since we incorporate our best theories back into our general background knowledge. This process of choosing the next test thus requires induction to justify it. So scientists do act on the choice of the best theory, and they do so *as* scientists (O'Hear could also note that they use their best theory so far to inform their formation of new theories). This is

action—scientific action—based on the best-tested theory, and thus requires acceptance of the principle of induction for its justification. O’Hear thus believes he can attack Popper’s attempt to eliminate rational justification as part of science by showing that something Popper *does* allow to be rationally justified (action based on said theories) is required for the very activity of science as described by Popper!

O’Hear misses a key point in Popper’s system, however: Popper's system of testing by attempted falsification is *not* intended to explain the nature of creative scientific discovery (in spite of the title of his book). It explains the epistemic engine used to produce what is usually thought of as the rational justification for scientific theories. This need not explain how to come up with new theories, only how to test them and choose amongst competing theories. In other words, Popper might allow that scientific creativity—obviously a part of science—involves induction, but this is *not* in conflict with Popper's system. Popper never claimed his system to be a complete description of science, nor that there was *no* induction going on in science, nor even that induction was not required for science. He claimed only that induction is not an inherent part of the scientific *testing* of theories. So with respect to the choice of future tests being based on the results of past ones, Popper's engine does not attempt to provide scientific justification for these choices. These choices are based on general background knowledge, and so they may well require induction without contaminating Popper's epistemic engine with said induction.

O’Hear makes another similar attack on a different front: Popper requires repetition of tests, yet without induction we cannot decide if a second test is even of the same type as the first. For example, testing the solubility of metals in acids might require testing iron in two locations at different altitudes. But we need induction to decide these are the same test at all. So once again, O’Hear thinks he has snuck induction into the back door of Popper’s system. My response

to this, in Popper's defence, is similar to my response to the previous point. Popper's engine—the logic of his scientific method—does not require repetition, in spite of what O'Hear implies. The logic of Popper's method, in fact, simply assumes that a test can, in principle, falsify a theory. Popper introduces repeatability as a practical requirement—something needed to accept the result of a test in the first place, but not something required by the logic of his method once the result of a test has been accepted. Just as background knowledge is required to make some rough guess as to what the more severe tests are—and to get Popper's method off the ground—repeatability is required to have enough confidence to accept the results of our tests to use them in Popper's logic at all. The *justification* for such acceptance is, like the formation of our background knowledge, not necessarily scientific or rational at all. The scientific method tells us how to use these things to proceed from them in a rational and scientific manner. It does not provide justification for them.

O'Hear further counters that "if we do not generalize from the past to the future, how can we discount the possibility that some failure does not occur in some theory we normally accept without question?" But again, this is asking too much. Popper does not require that we justify such things, only that given a certain set of nonrational background knowledge and test results, his method provides the most rational way we have of choosing—tentatively—between competing theories. O'Hear is correct, however, in noting that Popper's rejection of induction is not as thorough as it may sometimes appear, due to all these factors that bring it back into the practice of science, even if not into the logic of Popper's method.

A final attempt is made by O'Hear to pin induction on Popper: he claims that induction must be invoked if we are to accept Popper's view of science in the first place. However, the reader should by now be able to anticipate my response. O'Hear seems to be saying that the

(possible) use of induction in test choice and in the evaluation of test results makes induction a *prerequisite* for Popper's view of science. I do not think Popper would necessarily disagree with this! He is not, recall, eliminating induction from his general view of science or his motivation for doing science, nor even from the actual process of doing science. He is claiming something much narrower than that—all these inductive aspects of science and of Popper's method that O'Hear keeps bringing up can well be part of the process of doing science in the real world without being a necessary part of the method for testing theories. Popper has not eliminated induction from science, and neither does he claim to have done so; he has simply put it in its proper place, in the untidy, intuitive, common-sensical (but in practice necessary) and *nonrational* corners of science, rather than in the rational core—the systematic, logical means for testing theories.

References

Anthony O'Hear, "Rationality of Action and Theory-testing in Popper," *Mind* 84(334), pp. 273-276, 1975.

Karl Popper, *The Logic of Scientific Discovery*, New York: Harper Torchbooks, 1965.