

SIDE-BAR #3: Extracts from a paper to appear in a volume on
Musgrave....the full paper is onhne website.

CRITICAL RATIONALISM AND ITS FAILURE TO WITHSTAND CRITICAL SCRUTINY

PART I: THE SEVERE TESTING PRINCIPLE IN THE CRITICAL RATIONALIST PHILOSOPHY

Observations or experiments can be accepted as supporting a theory (or a hypothesis, or a scientific assertion) only if these observations or experiments are severe tests of the theory—or in other words, only if they result from serious attempts to refute the theory, and especially from trying to find faults where these might be expected in the light of all our knowledge. (Popper, 1994, p. 89)

The lack of progress in the neo-Popperian philosophy known as ‘critical rationalism’ may be traced to its inability to show the acceptability of the fundamental principle underlying the above quote:

Severity Principle (SP): Data **x** count as evidence in support of a hypothesis or claim H, only if **x** constitute severe tests of H—only if data **x** (**which are in accord with H**) result from serious attempts to refute H.

This failure seems deeply puzzling, given the intuitive plausibility of SP, ... Something like SP is endorsed far more generally in philosophy as well as in science, and yet it has been notoriously difficult to actually cash out what ‘surviving serious criticism’ demands, and why H’s surviving the ‘ordeal’ is good evidence for H. ...

What gives SP its plausible-sounding ring is the supposition that ‘H’s surviving serious criticism’ is being used in the way it is ordinarily meant: roughly, that H has been put to a scrutiny that would have (or would almost certainly have) uncovered the falsity of (or errors in) H, and yet H emerged unscathed, i.e., that H has survived a highly reliable probe of the ways in which H might be false. However, critical rationalists, as they freely admit, do not have resources to articulate anything like ‘reliable error probes’, ... Despite exhortations as in the epigraph from Popper, critical rationalists only espouse a weaker, *comparativist principle CR*:

CR: It is reasonable to adopt or believe a claim or theory P which *best survives* serious criticism.

But without being able to say that surviving the critical rationalist's test is any kind of evidence for P, a 'best surviving' claim may still have been very poorly probed, and thus P may be 'best tested' with **x**, even though **x** actually provides scant evidence for P at all.

So, while we may (and most of us do) accept the intuitive principle that CR is supposed to capture (namely the severity principle SP), we have yet to be given grounds to accept CR as instantiating the intended severity requirement. To simply declare CR is a reasonable epistemic principle without giving evidence that following it advances any epistemic goals is entirely unsatisfactory, and decidedly un-Popperian in spirit. So it does not help for the Popperian to insist 'there is no more rational procedure' than to prefer a hypothesis that is well-corroborated, i.e., that has withstood serious or severe criticism (Popper 1962, p. 51), without demonstrating the existence of testing methods that are actually severe. ...

Granted, Popper invites this problem, due in part to his efforts to distinguish himself from the 'inductivists' of the time. The deductive resources to which Popper limited himself neither allows substantiating a claim to actually *have* a severe test or error probe, nor to say that the probability of P's passing test T is low, given P is false. Now that we know so much more about conducting severe testing in experimental practice than was evident through logical-empiricist blinders, one would have expected this weakness to be remedied by Popper's critical rationalist followers. Surprisingly, it has not been.

1. BETWEEN SKEPTICISM AND IRRATIONALISM: THE WEDGE IS NOT ENOUGH

1.1

What enables this 'wedge' to be 'driven between skepticism and irrationalism' (p. 322), Musgrave thinks, is the critical rationalist's rejection of the traditional justificationist's principle (J) (p. 321):

- (J) A's believing that P is reasonable if and only if A can justify P, that is, give a conclusive or inconclusive reason for P, that is, establish that P is true or probable.

Blithely accepting that an 'inconclusive reason' for P must be understood as assigning P a probability, Musgrave touts a philosophy wherein 'P is reasonable' never means having to say there's even an inconclusive reason for P

By rejecting principle (J), the critical rationalist is free to hold:

- (1) it is or may be reasonable to prefer hypothesis P despite the lack of any warrant for the truth of P.

... Musgrave replaces (1) with:

- (1') it may be reasonable to believe hypothesis P despite the lack of any warrant for the truth of P.

....

In particular, we may have a method or procedure (M) for classifying claims as reasonable or not. That is:

M: P → {reasonable, unreasonable}

Associated with each such M is an epistemic principle (EM):

EM: It is reasonable to believe P if and only if P is classified as reasonable by method M, i.e., iff P satisfies a criterion set out by method M.

We can readily agree with Musgrave that P may be classified as reasonable to believe by method M, even without there being reasons for regarding P as true or probable, while still demanding that the chosen classification method M have some warrant or justification

It is of interest to note that contemporary statistical hypothesis testing, e.g., Neyman-Pearson (NP) tests, exemplify Musgrave's wedge: tests use data x to classify statistical hypotheses 'acceptable' or not, without assigning them degrees of probability; however, they will be regarded as good tests only insofar as it can be shown they very infrequently classify false hypotheses as true (or true hypotheses false), i.e., they must be shown to be reliable in this sense, i.e., low error probabilities.