"Critical Assessment of the Scientific Method: Experience, Intuition, and Justification"

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Scientific theories systematically represent the results of our most respectable intellectual pursuits. Our beliefs in our best scientific theories derive from the evidence which supports those theories. Such evidence has long been thought to be mainly inductive and observational. In contrast, evidence for our best mathematical theories seems to be deductive and distant from observation. But, assessment of the ways in which both mathematics and science is actually practiced undermines the differences in the ways in which we justify scientific and mathematical theories. Further assessment of scientific and mathematical methodology and the role of intuition in constructing theories shows that science and mathematics have much in common with philosophy. We'll discuss a variety of historical and contemporary cases.