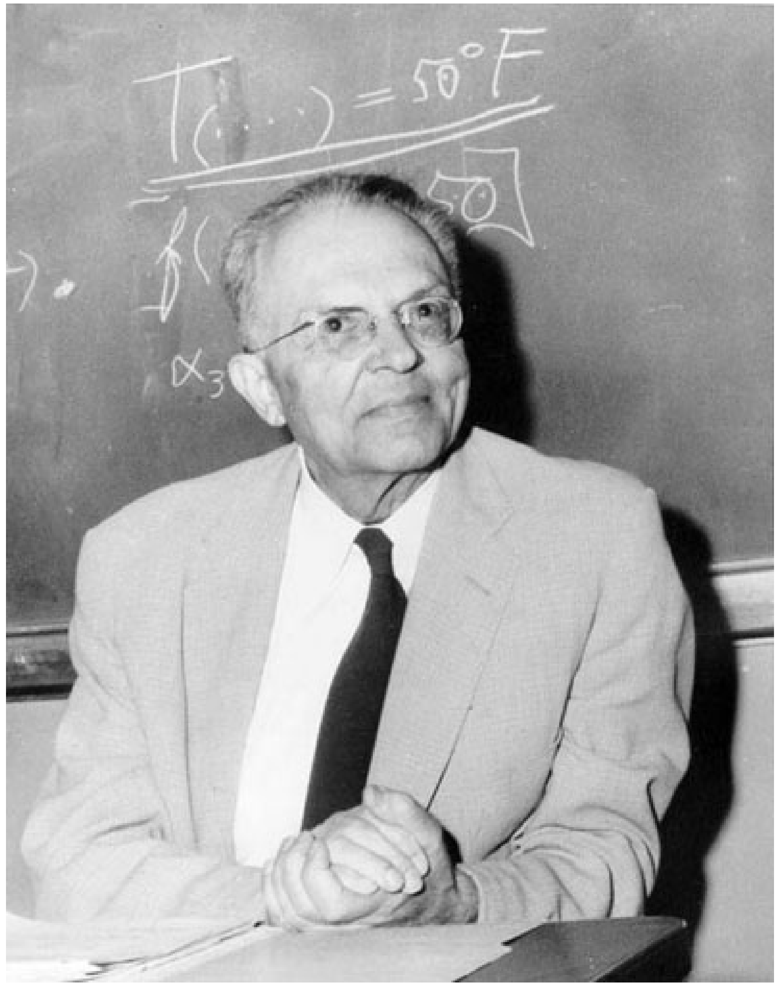
Suppes on Science and Philosophy

“For his broad efforts to deepen the theoretical and empirical understanding of four major areas: the measurement of subjective probability and utility in uncertain situations; the development and testing of general learning theory; the semantics and syntax of natural language; and the use of interactive computer programs for instruction.”

Statement of the Award of the National Medal of Science
1990

I had worked both in philosophy and science, though from the standpoint of research, I primarily thought of myself as a philosopher of science. I think this is probably not really the most accurate characterization. I continue to do and continue to have great interest in the philosophy of science, but it is certainly also true that, in many respects, more of my energy in the last quarter of a century has been devoted to scientific activities. . . . The two main areas are psychology, above all, and physics. . . . I could take another line and say that a distinction between philosophy of science and science is in itself incorrect. In many ways I am sympathetic with such a summary of Quine's view, namely, that philosophy should mainly be philosophy of science and philosophy of science should mainly itself be science.

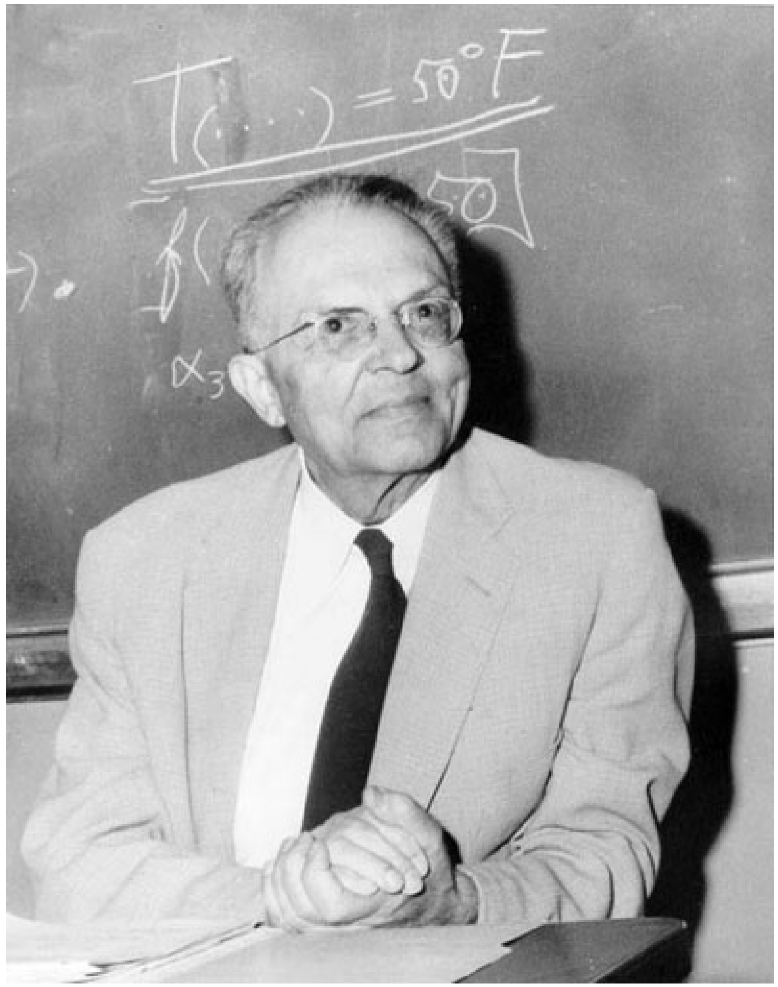
I think the influence of [my] scientific work on my philosophy has been of immeasurable value. I sometimes like to describe this influence in a self-praising way by claiming that I am the only genuinely empirical philosopher I know. It is surprising how little concern for scientific details is to be found in the great empirical tradition in philosophy. It has become a point with me to cite scientific data and not just scientific theories whenever it seems pertinent.



It is one of the theses of this book that there is no theoretical way of drawing a sharp distinction between a piece of pure mathematics and a piece of theoretical science. . . From a philosophical standpoint there is no sharp distinction between pure and applied mathematics, in spite of much talk to the contrary. The continuity between pure and applied mathematics, or between mathematics and science, will be illustrated here by many examples drawn from both domains.

Representation and Invariance, p. 33

The theory of measurement provides an excellent example of an area in which real progress has been made in the foundations of psychology. In earlier decades psychologists accepted the mistaken beliefs of physicists like Norman Campbell that fundamental measurement in psychology was impossible. Although Campbell had some wise things to say about experimental methods in physics, he seemed to have only a rather dim grasp of elementary formal methods, and his work in measurement suffered accordingly. Moreover, he did not even have the rudimentary scholarship to be aware of the important earlier work of Helmholtz, Hölder, and others.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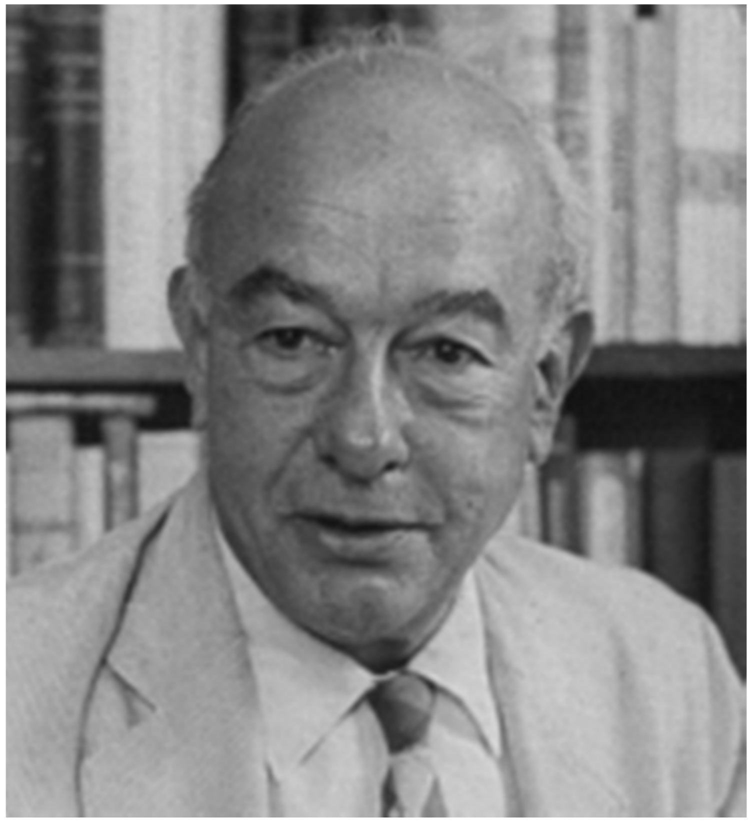

Carnap . . . makes a point of emphasizing that in his view there are two distinct concepts of probability. One concept is that of empirical relative-frequency, and the other is the concept of probability expressed in confirmation theory. He emphasizes most strongly that the statistical concept is empirical, while the confirmation-theory concept is analytic or logical in character. Although this distinction seems to have been accepted by a great many philosophers, it is not at all clear that a persuasive case has been made by Carnap for this dualistic approach. (p. 197)

Knowledge of meteorology has stood me in good stead throughout the years in refuting arguments that attempt to draw a sharp distinction between the precision and perfection of the physical sciences and the vagueness and imprecision of the social sciences. Meteorology is in theory a part of physics, but in practice more like economics, especially in the handling of a vast flow of non-experimental data.

[I]t is my conviction that an important function of contemporary philosophy is to understand and to formulate as a coherent world view the highly schematic character of modern science and the highly tentative character of the knowledge that is its aim. The tension created by a pluralistic attitude toward knowledge and skepticism about achieving certainty is not, in my judgment, removable. Explicit recognition of this tension is one aspect of recent historically oriented work in the philosophy of science that I like.

I tried to push a pragmatic theory, looking at the broad history from ancient astronomy to Kepler, to show how many concepts that were important to Babylonians for making omens and the like, and later, many aspects of Greek thought as well, were simply pushed out of the way and ignored. But the varied and detailed observations made by the Babylonian astronomers and used by Ptolemy more than five hundred years later, are even of some use today. Ptolemy's own central work was preserved in the tradition of a millennium and a half span leading up to Kepler and including, of course, the less important work of Copernicus. In this long period two important things were preserved: the observations reaching back to Babylonian times, and many of the Ptolemaic methods of computation, which Copernicus himself continued and were only changed by the new astronomy, as Kepler called what he introduced. The whole subject was then given a much greater perfection by Newton, with the introduction of gravitational dynamics. But much of what Kepler and Newton did rested on the shoulders of these observational and calculational giants of the distant past. It is this that is pragmatic—keeping the useful and letting go of the rest.