Kuhn argues that the history of science properly applied shows that claims of the objectivity of scientific knowledge are not supportable. “Properly applied” means that traditionally, historians of science have accepted the notion that science is approaching a “correct” view of reality, telling a chronological story and focusing on the present as superior to the past. When you look at the reasoning and the context of the process of discovery however, you find that the formulation of scientific theories is much more complex, and much less clearly the application of logic to data. Scientists looking at the same data often reach different conclusions. They always use logic, but start with different assumptions.

When a new field emerges, scientists come to an agreement on a certain baseline of definitions. Kuhn calls this a paradigm: a conceptual framework that everyone agrees with. They are playing the game of Newtonian physics; of molecular biology, etc. The paradigm defines what kind of research is acceptable. Kuhn calls this normal science, and in it, most scientists are exploring the paradigm, not trying to make breakthrough discoveries. Because paradigms are interpretations and are non-unique, inevitably new experiences using perhaps new ways of seeing will lead to an accumulation of anomalies. Although initially ignored, if the anomalies persist, the old theory or paradigm will be replaced by the new one. New paradigms define new realities.

No single feature of Kuhn’s thought is new. Starting in the 1800s, there was long tradition of eminent thinkers who asserted the historicity of knowledge, including scientific knowledge; That scientific knowledge represents interpretations of experience rather than revealing an underlying independent reality.

Although Kuhn’s critique of science is flawed in some details, it cannot be dismissed

Science wars: What Scientists Know and How They Know It
Steven Goldman
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