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The Diagnosis of Error in Histories of Science

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Whether and how to diagnose error in the history of science is a contentious issue. For many scientists, diagnosis is appealing because it allows them to discuss how knowledge can progress most effectively. Many historians disagree. They consider diagnosis inappropriate because it may discard features of past actors' thought that are important to understanding it, and may have even been intellectually productive. Ironically, these historians are apt to diagnose flaws in scientists' histories as proceeding from a misguided desire to idealize scientific method, and from their attendant identification of deviations from the ideal as, ipso facto, a paramount source of error in historical science. While both views have some merit, they should be reconciled if a more harmonious and productive relationship between the disciplines is to prevail. In *To Explain the World*, Steven Weinberg narrates the slow but definite emergence of what we call science from long traditions of philosophical and mathematical thought. This narrative follows in a historiographical tradition charted by historians such as Alexandre Koyre and Rupert Hall about sixty years ago. It is essentially a history of the emergence of reliable (if fallible) scientific method from more error-prone thought. While some historians such as Steven Shapin view narratives of this type as fundamentally error-prone, I do not view such projects as a priori illegitimate. They are, however, perhaps more difficult than Weinberg supposes. In this presentation, I will focus on two of Weinberg's strong historical claims: that physics became detached from religion as early as the beginning of the eighteenth century, and that physics proved an effective model for placing other fields on scientific grounds. While I disagree with these claims, they represent at most an overestimation of vintage science's interest in discarding theological questions, and an overestimation of that science's ability to function at all reliably.