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Is the category 'historical science' appropriate?: examining the applicability of Tucker's philosophy of historical scie

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In philosophy of science, historical science used to be an unfashionable topic, but studies on this subject started to appear lately. Aviezer Tucker, a representative of this new trend, summarizes the methodology of historical science in Bayesian terms in his book Our Knowledge of the Past (2004). In this presentation, we introduce and examine the methodology Tucker proposes, and investigate the problem of whether important distinctions become less visible by categorizing several fields as 'historical science' as Tucker does.

Tucker regards historical science as a category that originates with biblical criticism and comparative linguistics, and that includes scientific historiography and evolutionary biology. According to him, the essence of historical science lies in the research method in which various pieces of evidence remaining today are used to study their common causes, and the method is supposed to have two steps: the first step is one of theoretically demonstrating that similar pieces of evidence actually preserve information of a common cause rather than are similar by coincidence, while the second being one of reconstructing intermediate stages between the common cause and the pieces of evidence and conjecturing on the features of the common cause.

Tucker proposes to see those reasoning processes in historical science as comparison of likelihoods. In the first step, likelihoods of separate-cause hypotheses are compared with common-cause hypotheses, while those of various hypotheses on intermediate stages and features of the common cause are compared in the second step.

This type of simplified analysis has its own virtue of illuminating common features among diverse fields that were not easily visible. However, our concern is that there may be other things that become less visible by simple categorization. To be more concrete, there should be some methodological difference between fields in which systematic relationships after the common cause is the focus of study and those in which the sequence of common causes themselves is the main focus. Also, there may be some qualitative, rather than quantitative, difference between fields like evolutionary biology in which a large amount of quantitative data is available and those in which the past should be reconstructed using relatively small amount of information.

Keywords: historical science, philosophy of science, Bayesianism, likelihood, common cause, evolutionary biology