
Statistically autonomous explanations

Andre Ariew*¹

¹Department of Philosophy, University of Missouri (MU) – Department of Philosophy University of Missouri Columbia, MO 65221, United States

Abstract

Session: The space of explanations in evolutionary biology. (Huneman, Ariew, Darden, Lyon, Strevens, Walsh) Ian Hacking (The Taming of Chance, 1990) calls Francis Galton's account of the "reversion to mediocrity" phenomena found in the distribution of hereditary genius an early instance of a "statistically autonomous explanation". To Hacking, "autonomous" is opposed to "causal". Galton's explanation does not cite possible underlying causal features of a population. Rather, it involves demonstrating that regression is a mathematical consequence of the Normal Law. In my talk, I will present Galton's early demonstration of reversion through his use of a quincunx, a shot-dropping machine. The aim is to strengthen and elucidate Hacking's view that statistically autonomous explanations are an important form of explanation in the history of science. I will show that the key features of statistically autonomous explanations in Galton's reversion are found in early 20th century population genetical accounts of evolution by natural selection. Consequently, population genetical accounts of natural selection are also instances of statistically autonomous explanation. One key feature is found in the explanandum: the phenomena to be explained is an instance of a large-scale regularity that would not be explained by reference to individual level effects. The other key feature is found in the explanans. The aim of a statistically autonomous explanation is to demonstrate that the large scale regularity would happen if such-and-such were the case even if such-and-such could never actually happen in real world populations (Gibbard and Varian, "Economic Models", 1978). Finally, I regard statistically autonomous explanations as an alternative to Michael Strevens' fully causal "kairitic account" of explanation (Strevens, "The Causal and Unification Approaches to Explanation Unified-Causally", 2004).

*Speaker