

A Salmonian Approach to Mechanistic Explanations

Mechanistic explanations are abundant throughout the biological sciences. Here, I sketch a new approach to mechanistic explanation. By utilizing and enhancing Wesley Salmon's work, I argue that mechanisms are just causal processes propagating through space and time that may intersect with other causal processes. This new way of understanding mechanistic explanation may better handle some types of biological phenomena. In an attempt to illustrate this, I offer a case study in breast cancer research. Drawing from new research, I show how scientists are utilizing findings in porcine lactation to explain breast cancers within the human population. I argue that they are indeed utilizing Salmonian mechanisms to provide a biological explanation for breast cancer. I conclude that a Salmonian approach to mechanistic explanations fits well with scientific practice, and may provide a much needed explanatory pathway for some types of biological phenomenon.