

Donald Gillies: The Problem of Causality in the Bio-Medical Sciences

The talk begins by considering a fundamental problem in the theory of causality, namely how one gets from a correlation to causation. For example, heavy smoking is correlated with lung cancer, and this link is regarded as causal, but also heavy drinking is correlated with lung cancer, though this link is not regarded as causal. Two approaches to this problem are (i) via interventions, and (ii) via mechanisms. In the talk the interventionist approach is taken as fundamental, but it is argued that this implies one version of a mechanist approach. This philosophical analysis is illustrated by considering research into smoking and heart disease carried out in the last quarter of the 20th century.