The Causal Autonomy of the Special Sciences
Peter Menzies and Christian List

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The systems studied in the special sciences are often said to be causally autonomous, in the sense that their higher-level properties have causal powers that are independent of those of their more basic physical properties. This chapter aims to clarify what is implied by the doctrine of the causal autonomy of special-science properties and to defend the doctrine using an interventionist theory of causation. In terms of this theory, it shows that a special-science property can make a difference to some effect while the physical property that realizes it does not. Moreover, the theory permits identification of necessary and sufficient conditions for the causal autonomy of a higher-level property, and to show that these are satisfied when causal claims about higher-level properties have a special feature we call realization-insensitivity. This feature consists in the fact that the relevant claims are true regardless of the way the higher-level properties they describe are physically realized. The findings here are consistent with those of other philosophers, for example Alan Garfinkel, who have noted the realization-insensitivity of higher-level causal relations as a distinctive feature of the special sciences and have suggested that this feature ensures their independence from lower-level causal relations.