Mechanisms and Downward Causation

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Abstract

To explain phenomenon R by showing how mechanism M yields output R each time it is triggered by circumstances C, is to give a causal explanation of R. This paper analyses what mechanistic analysis can contribute to our understanding of causation in general and of downward causation in particular. It is first shown, against Glennan (1996), that the concept of causation cannot be reduced to that of mechanism. Second it is suggested to correct Craver and Bechtel ' s (2006) claim that the framework of mechanistic explanation dissolves the appearance of causal processes that « cut across levels ». Their analysis is inadequate for cases of « downward causation ». I suggest construing a decision's influence on molecules in muscle cells as a global constraint. Microscopic laws determine the detailed evolution of muscle cells and glucose molecules, but this evolution is constrained by the fact that it must be compatible with the action caused by the decision. The constraint the decision exercises on microscopic processes in muscle cells cannot be understood in terms of constitution because the decision doesn't constitute the microscopic processes

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