The problem of ontic levels in mechanistic explanation.

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Abstract

Accounts of mechanistic explanation have what I term the *problem of ontic levels*. The problem arises from two core but conflicting commitments of the mechanistic view: that mechanistic explanations are ontic, or that they are structures in the world, as opposed to mere representations or descriptions; and that mechanistic explanations are multilevel, that is to say that the entities at one level can be explained by merely revealing the realizing mechanisms at the level below it (Craver, 2007). Evidently, there is a tension. Either the ontic commitment is a commitment to the existence of entities at the lowest explanatory level and entities at the higher levels are mere heuristic stops (Gillet/Bickle), or we must explain how higher level entities earn their ontological status. In this paper I suggest an alternative view of the ontic commitment that may ease its compatibility with multilevel explanations. To do so I rely on the view that certain irreducible relational features, such as those elucidated by computer simulations of network interplay, redeem the status of levels as ontologically viable (Symons 2008). Using implications of Symons' approach, I walk through examples from the biological sciences that are considered both complex and mechanistic. I suggest that the irreducible relational features found in these examples are evidence that mechanistic explanations can be both multilevel and ontic. Further, I conclude that if this is the case then the ontic commitment is better off interpreted as a claim of structural realism.

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