
Animal Models as Experimental Model Systems

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Abstract

I argue that animal models in neurobiology are best characterized as experimental model systems that include but are not exhausted by live non-human animals or parts thereof. As such animal models in neurobiology should be conceptualized in relation to the notions of model organism and experimental organism. Nevertheless, following Gayon (2006) and Ankeny and Leonelli (2011), I argue that these notions should be distinguished from one another because, regardless of the similarities they share, they represent different research tools. I stress that the predominant concept in the context of experimental neurobiology is *animal model* and show that neurobiological animal models function as a type of experimental tool that differs in relevant respects from model organisms as they are used in genetics, for example. For this purpose, I study the discussion of model organisms within the philosophy of biology and the life sciences. I analyze the relationship between the notions of model organism, experimental organism, and neurobiological animal model. I conclude that animal models in neurobiology are experimental model systems of the type described by Rheinberger (1992) and Weber (2005). I then compare the notion of experimental model system to that of experimental paradigm (as used by Sullivan 2010) and argue that the former better captures the historical developments of the use of animal models in experimental neurobiology. To exemplify this point, I refer to the developments in the applications and the modifications of the Morris water maze test as an instrument for modeling human learning and memory in rodents.

References:

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