

## Berlin School of Mind and Brain

Humboldt-Universität zu Berlin

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### Topics in Cognitive Modelling

Cognitive models are, essentially, theories of cognitive activity (decision-making, belief formation, perception, learning, etc.) implemented in computer simulations. Theories aim at explaining the cognitive activity that generated the data collected. Models are thereby constructed and developed to test these theories. In this course we will enquire cognitive models from three philosophical fronts: *representation & explanation*, *realism vs instrumentalism*, and *feminist philosophy of science*. What ontological claims about cognition can reasonably be made on the basis of a model? Does a model accurately *represent* the cognitive phenomenon under study? If it does not, what kinds of things are cognitive models and how do they have *explanatory virtue*? Do properties of the model *exist* beyond the model itself or are they useful *constructs* that enable cognitive patterns to be predicted? Cognitive models, as tools to test theories, leverage modellers' assumptions. Is model-based reasoning affected by cognitive biases? If so, how to overcome them? By the end of the course students are expected to be equipped to critically think the ontology and epistemology of scientific models specifically in the context of computational models of cognitive behaviour. Classes will be conducted as interactive lecture/discussions.