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Title: An argumentative agent-based model for scientific inquiry

Abstract: A prevalent view in the literature on the division of cognitive labor has been the assumption that a rational agent always opts to pursue the theory that is best supported by available evidence. But is such an evaluative strategy heuristically optimal? In this paper we tackle this question by means of an agent-based model (ABM). In contrast to existing ABMs representing different aspects of scientific inquiry, our model is based on the argumentative dynamics that underlies scientific practice. Agents, representing scientists, move along an 'argumentative landscape'. The argumentative landscape, representing rivaling theories in a given scientific domain, is based on abstract argumentation framework. The model is designed to investigate the efficiency of different evaluative strategies by means of which scientists decide which theories to pursue.