UBC Department of Philosophy
Colloquium

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How to Train Your Model: Practical Reasoning in Science

Abstract:

It would be ideal if climate researchers could explain their work so that a lay epistemic agent could reason immediately to the practical consequences of climate research. Much recent work on climate research and climate modeling with the aim of "communicating the consensus" focuses on three related challenges: (1) establishing indubitable *facts* about climate change, (2) firming up climate *models* (Frigg, Werndl), and thus (3) establishing a broad public, as well as a scientific, *consensus* about the practical inferences one should draw from climate research (Oreskes, Gore, Obama). I argue that (1) and (2) are of limited utility in achieving (3). And, as Beatty, Brown, and Intemann emphasize, basing an account on consensus alone encounters obstacles. It would be more effective to communicate methods of model-based reasoning that make practical conclusions phenomenologically inescapable. Methods used by scientists to reason practically using models were a standard part of scientific pedagogy of the nineteenth century tradition of classical mechanics, electrodynamics, and statistical mechanics (in the context of scientific pedagogy emphasized by Richardson, Woody, and Kaiser). Classical model-based reasoning has been successful and is now part of the background of everyday practical reasoning. We lack a similarly effective and widespread tradition of practice in contemporary theories of nonlinear dynamics and chaos. I sketch the outline of an account, with reference to a raft of recent work (including work by Strogatz, Parker, Zuchowski, Cartwright, and Bokulich). The account for climate science thus turns out to have a broader range.

FRIDAY, November 24 BUCH A103 4.00 – 6.00

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