

Towards Impartial Assessments of Theories

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If we are to believe the Latours of this world, we must treat as pure fantasy the claim that empirical judgments empower scientists to impartial assessments of rival theories or models. Instead of truthfully representing their target systems, the accusation goes, empirical judgments are merely the result of an (elaborate) social negotiation between scientists. Otherwise put, on this view, empirical judgments are nothing more than social constructs. In this talk, I make two claims: (1) We must steer clear of such extremely pessimistic views. (2) We must nonetheless chart a course that acknowledges the existence of significant obstacles on the way to fully impartial assessments of rival theories or models. To motivate the first claim, I argue that the view that empirical judgments are mere social constructs is at best unfounded and at worst internally incoherent. To motivate the second claim, I argue that a significant obstacle to fully impartial assessments of rival theories or models is the coarseness of empirical variables. As an illustration, scientific models produced via machine-learning (ML) are discussed. It is suggested that beyond the familiar problems relating to noisy data, model selection, bias-variance trade-off and hyperparameter setting, the accuracy and even explainability of ML-produced models can be substantially impaired by the coarseness of the deployed features.