Inductive logic

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Inductive Logic

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The current state of inductive logic is puzzling. Survey presentations are recurrently offered (see, e.g., [20, 30, 52], classic textbooks by leading scholars are reedited and new ones are published (see [28, 59], respectively) and a very rich and extensive handbook was entirely dedicated to the topic just a few years ago [23]. Among the contributions to this very volume, however, one finds forceful arguments to the effect that inductive logic is not needed and that the belief in its existence is itself a misguided illusion ([50]; also see [51] for a consonant line of argument), while other distinguished observers have eventually come to see at least the label as “slightly antiquated” ([43], p. 291).

What seems not to have lost any of its currency is the problem which inductive logic is meant to address. Inference from limited ascertained information to uncertain hypotheses is ubiquitous in learning, prediction and discovery. The logical insight that such kind of inference is fallible may well be a platitude after Hume, but its real-life counterparts remain painfully prominent nonetheless – missed medical diagnoses [66] or judicial errors [46] illustrate effectively. And the otherwise amazing success of inference under uncertainty in scientific inquiry as well as in many everyday matters is still a live issue in the study of human knowledge, cognition and behavior [63].

Having sketched out this bewildering background, I will not try to tame it in any way – I think it’d be unwise. Instead, I will settle on one specific way to pursue inductive logic which, although popular and somehow traditional, is far from uncontroversial. This view (i) crucially involves the analysis of how given premises