

Truth and Proof in the Long Run

Essays on Trial-and-Error Logics

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Abstract

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The theme of this book is convergence. For many philosophical representations of the evolution of theories, as well as representations of the meaning of the language used to express these theories, it has been essential that there exists some kind of convergence. This thesis introduces and collects four papers in philosophical logic pertaining to two different aspects of this basic tenet. On one hand, we have theories, their axioms and their rules of inference. We often have reason to revise a theory over time, to delete some axioms, add some new ones, or perhaps even revise our modes of reasoning. A simple model of such activity, providing a definition of what it may mean that something is *provable in the long run* in such a dynamic setting, is here investigated, and its relevance for the philosophical discussion about mechanism and knowable self-consistency is evaluated. On the other hand, the notion of a convergent concept, a term which, for whatever reason, has a certain tendency to its application over time, gets a precise explication in terms of *trial-and-error classifiers*. Formal languages, based on these classifiers, are introduced with semantics and proof systems, and are explored using standard logical methods.