rious work, of course, the reader must often complete steps in logical arguments for him/herself.

In short, I find *Bayes or Bust* to be a witty and very readable treatment of the important topic of Bayesian confirmation theory. As a novice in this field, I have learned a great deal from the book, but I imagine that the expert would find it just as engaging. Earman's intention is to provoke as well as to inform through this work, and I judge his efforts to have been successful on both counts.

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Reflexivity A Source-Book in Self-Reference, edited by Steven J. Bartlett, Amsterdam, North-Holland 1992, XI + 509 pp.

Reviewed by

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This book collects together several papers on a phenomenon of reflexivity. The anthology has an introduction by Bartlett and five parts: I. Semantical self-reference (W. V. Quine, 'Paradox'; P. Weiss, 'The Theory of Types'; J. Myhill, 'A system which can define its own truth'; G. Ryle, 'Heterogicality'; J. Jørgensen, 'Some reflections of reflexivity'; R. M. Martin, 'On non-translational semantics'; R. M. Smullyan, 'Languages in which self-reference is possible'; A. N. Prior, 'On a family of paradoxes'; N. Rescher, 'A note on self-referential statements'; R.L. Martin, 'Toward a solution to the Liar Paradox'; B.C. van Fraassen, 'Presupposition, implication, and self-reference'), II. Pragmatical self-reference (D.L. O'Connor, 'Pragmatic Paradoxes'; L.J. Cohen, 'Mr. O'Connor's "Pragmatic paradoxes"'; P. Alexander, 'Pragmatic paradoxes'; A. Duncan-Jones, 'Fugitive propositions'; D. J. O'Connor, 'Pragmatic paradoxes and fugitive propositions'; C. K. Grant, 'Pragmatic implication'; W. D. Hart, 'On self-reference'), III. Metalogical self-reference, F. B. Fitch, 'Self-reference in philosophy'; F. B. Fitch, 'Universal metalanguages for philosophy'; S. J. Bartlett, 'The idea of a

metalogic of reference'; S. J. Bartlett, 'Referential consistency as a criterion of meaning'), IV. Computational self-reference (J. McCarthy, 'First order theories of individual concepts and propositions'; H. J. Levesque, 'Foundations of a Functional approach to knowledge representation'; K. Konolige, 'Computational theory of belief introspection'; D. Perlis, 'Language with self-reference, I: foundations'; D. Perlis, 'Language with self-reference, II: knowledge, belief, and modality'), III. Self-referential argumentation (P. Weiss, 'Cosmic necessity'; R. J. Richman, 'On the self-reference of a meaning theory'; H. W. Johnstone, Jr., 'Argumentation and inconsistency'; A. Ross, 'On self-reference and a puzzle in constitutional law'; J. M. Boyle, Jr., 'Self-referential inconsistency, inevitable falsity and metaphysical argumentation').

Although this collection contains interesting papers (for example, those by Quine, Myhill, Smullyan, R. L. Martin, Fitch, McCarthy, Perlis, and Ross), it also raises serious doubts. At first, it is not sufficiently clear how reflexivity and self-reference are related. The title suggests that they denote the same phenomenon. Certainly, this usage could be justified by ordinary language. On the other hand, 'self-reference' is a technical term in logic which refers to a certain class of expressions, namely to expressions which are self-applicable, for example 'this sentence is false', where 'this' points out the first occurrence of 'this sentence is false' in the present review. Now, we can say that every case of self-reference is manifestation of reflexivity, although not every kind of reflexivity involves self-reference in the technical sense. For example, statements which begin with 'I' are certainly reflexive, but they are not self-referential. Unfortunately, Bartlett's introduction does not clarify this point. Further, the editor seems to think that reflexivity is a generic category with semantical self-reference, pragmatical self-reference, metalogical self-reference and computational self-reference as it species. I do not deny that reflexivity and self-referential phenomena form a wide class of cases. However, one should be very careful with regarding this class as fully uniform. Moreover, Bartlett's specification of particular cases of reflexivity is obscured by wrong terminological decisions. I see no justification for Bartlett's use of 'metalogical self-reference'. The papers grouped under this label have, except for incidental remarks, nothing to do with metalogic. Moreover, 'computational self-reference' is ill-chosen. In fact, part IV contains papers dealing mainly with so called autoepistemic logic.

My next reservation concerns the choice of papers. Let me restrict my remarks here to self-reference in logic. It is very difficult to overestimate the historical role of self-reference for the development of logic. Works of Russell, Gödel and Tarski were closely connected with

self-referential phenomena. The fight against paradoxes marked a heroic stage in the development of mathematical logic and the foundations of mathematics. Also, recent interest in self-reference resulting, among other things, in provability logic, autoepistemic logic and studies of paraconsistency, is remarkable. Unfortunately, no fragment of the collection does justice to this historical development. For example, almost nothing is said about arithmetization as a very powerful device for a normalization of self-reference in syntax. We also find no information about relations between syntax and the theory of types. On the other hand, the collection has papers which are obsolete (Weiss, Jørgensen), marginal (the exchange of views between O'Connor, Cohen, Alexander and Duncan-Jones) or even have nothing to do with reflexivity and self-reference (R. M. Martin, Grant). Thus, readers who have no previous knowledge of what is going on in the problem of reflexivity can be seriously puzzled by the material included in the reviewed book, the more so as Bartlett's introduction does not help very much. Worse, the introduction can puzzle readers on own account. For example, we read that "formal systems must choose between consistency and comprehensiveness" (p. 15), although no such choice occurs in logic. On p. 15, Bartlett quotes Russell's statement on the monistic theory of truth, but he forgets to add that Russell strongly criticized this theory. Thus, a reader can think that Russell advocated the view that every truth is analytic.

The above remarks suffice for a decisively negative evaluation of Bartlett's collection. Personally, I am even happy that I have an anthology with various papers which are not easily accessible. However, it is too little to regard this collection as an editorial success.