

Stegmüller's books have become classic sourcebooks in their respective areas. They contain detailed and often technically augmented expositions of fundamental problem areas as well as of discussions of attempted solutions. The new expanded volume on explanation, substantiation (*Begründung*) and causality is no less than 1116 pages.

A short review cannot do justice to all problem areas. Rather than attempt to cover everything I shall first briefly outline the contents of the first ten chapters (with special attention to what is new in the second edition), then discuss in more detail the entirely new Chapter XI, and finally pick out some questions for further discussion. The justification for this strategy is that there are detailed expositions of the contents of the first edition,¹ and that the second edition is, with the exception of some appendages and Chapter XI, (almost) identical with the first.

¹. There is first an introduction with an outline of the contents of the book, and then Chapter 0 which gives the essentials of logic. Chapter I is, in a sense, another introduction for it reviews the central features and varieties of the covering law-model of explanation. Stegmüller distinguishes between everyday concepts of explanation and scientific ones, discusses Hempel's and Oppenheim's schema (the H-O-Schema), distinguishes between the explanation of singular events and of laws as well as between theoretical and empirical explanations.

Chapter II is devoted to the varieties of Hempelian systematization, i.e. to

explanation, retrodution and prediction. There is a discussion of the thesis that all these forms are structurally identical — a theme to which he returns in the new Chapter XI. Chapter III gives some (as Stegmüller modestly puts it) simplified models for deterministic and probabilistic explanations within which e.g. the various forms of systematization can be given more precise characterizations. It contains the first new appendix, entitled “An Attempt to Construct Discrete Analogy-Models for Quantum Mechanics”. Stegmüller here argues, contra what can be read from Rescher’s examples (discussed in the main body of the chapter) that indeterminism can also occur with deterministic laws.

Chapter IV, the shortest one of all, treats with the ontological aspects of explanations. Stegmüller here dismisses as indefensible the view that explananda are ontological constituents of the real world. He then considers the view that explananda are abstract entities and the rival nominalist attempt to reconstruct the explanation relationship in terms of the operator “explains the fact that”. He ends up favouring the essentially Hempelian view that the explanation relationship is a two-placed one between sentences.

Chapter V is devoted to laws of nature and to the problems of lawlikeness and counterfactuals. It contains no doubt one of the most detailed discussions of Goodman’s analysis and also an evaluation of Rescher’s proposal in terms of contexual ambiguities and hypothetical reasoning. There are two new appendices, on Peter Gärdenfors’s alternative to Rescher’s proposal in terms of ‘minimal changes’ of epistemic states (or belief sets), and another one which gives a Quinean (evolutionary) solution to Goodman’s paradoxes of lawlikeness.

Chapter VI treats with historical and psychological explanations, and with the alleged dissimilarities between them and natural-scientific explanations. There is a new appendix on the intentionalist action-theoretic proposal of G.H. von Wright, and a discussion of R. Tuomela’s criticism of it. Chapter VII is devoted to the problem of causality. It contains discussions of the concept of cause, causal necessity, causal modalities, causal laws and causal explanations, as well as of the various forms of the principle of determinism. In this second edition Stegmüller stresses the importance of two developments. There is an appendix on Mackie’s analysis of causation as well as a discussion (35 pages) of Suppes’s probabilistic theory of causation. Here Stegmüller also raises the question if Mackie’s account can be cast along probabilistic lines.

Chapter VIII is about teleological and functional explanation, and about cybernetics and self-regulating systems. Stegmüller here distinguishes between formal and material teleology as well as between genuine and apparent teleology, arguing that causalist and finalist descriptions and