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stock-flow structure; 3.3.4 Equation writing and dimensional checking; 3.4 Some further important issues in SD modelling; 3.4.1 Use of soft variables; 3.4.2 Co-flows
3.4.3 Delays and smoothing functions3.4.4 Model validation; 3.4.5 Optimisation of SD models; 3.4.6 The role of data in SD models; 3.5 Further reading; References; 4 Combining problem structuring methods with simulation: The philosophical and practical challenges; 4.1 Introduction; 4.2 What are problem structuring methods?; 4.3 Multiparadigm multimethodology in management science; 4.3.1 Paradigm incommensurability; 4.3.2 Cultural difficulties; 4.3.3 Cognitive difficulties; 4.3.4 Practical problems; 4.4 Relevant projects and case studies; 4.5 The case study: Evaluating intermediate care 4.5.1 The problem situation4.5.2 Soft systems methodology; 4.5.3 Discrete-event simulation modelling; 4.5.4 Multimethodology; 4.6 Discussion; 4.6.1 The multiparadigm multimethodology position and strategy; 4.6.2 The cultural difficulties; 4.6.3 The cognitive difficulties; 4.7 Conclusions; Acknowledgements; References; 5 Philosophical positioning of discrete-event simulation and system dynamics as management science tools for process systems: A critical realist perspective; 5.1 Introduction; 5.2 Ontological and epistemological assumptions of CR; 5.2.1 The stratified CR ontology
5.2.2 The abductive mode of reasoning5.3 Process system modelling with SD and DES through the prism of CR scientific positioning; 5.3.1 Lifecycle perspective on SD and DES methods; 5.4 Process system modelling with SD and DES: Trends in and implications for MS; 5.5 Summary and conclusions; References; 6 Theoretical comparison of discrete-event simulation and system dynamics; 6.1 Introduction; 6.2 System dynamics; 6.3 Discrete-event simulation; 6.4 Summary: The basic differences; 6.5 Example: Modelling emergency care in Nottingham; 6.5.1 Background; 6.5.2 The ECOD project
6.5.3 Choice of modelling approach

Sommario/riassunto

"In recent years, there has been a growing debate, particularly in the UK and Europe, over the merits of using discrete-event simulation (DES) and system dynamics (SD); there are now instances where both methodologies were employed on the same problem. This book details each method, comparing each in terms of both theory and their application to various problem situations. It also provides a seamless treatment of various topics--theory, philosophy, detailed mechanics, practical implementation--providing a systematic treatment of the methodologies of DES and SD, which previously have been treated separately. "--
"Explores the integration of discrete-event simulation (DES) and system dynamics (SD), providing comparisons of each methodology"--