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| Nota di contenuto | Cover; Half-title; Title page; Copyright information; Table of contents; Preface; Introduction; Part I Groundwork; 1 Scientific Composition, the Universe, and Everything; 1.1 The Scientific Background: Compositional Explanation, Reductionism, and Emergentism in the Sciences; 1.1.1 Compositional Explanations and their Concepts; 1.1.2 Scientific Reductionism and Some of its Characteristic Claims; 1.1.3 Scientific Emergentism and Some of its Characteristic Claims; 1.2 The Positivist Legacy in the Philosophy of Science, the Antireductionist Consensus, and New Work on Reduction 1.2.1 Positivism and the Nagelian Model of Reduction: Understanding the Greedy Approach and its Idiosyncrasies 1.2.2 The Antireductionist Consensus and its Famous Arguments; 1.2.3 Recent Philosophical Work |

on Reduction in the Sciences; 1.3 Philosophical Work on Scientific Composition; 1.3.1 The Standard "Functionalist" Machinery of Philosophy of Mind: An Approach to the Composition of ...; 1.3.2 Manipulability-Based Accounts from Philosophy of Science: An Approach to the Composition of Processes ...; 1.4 Building a Bridge to the Sciences and their Potential Insights

2 A Beginning Framework for Scientific Composition

2.1 Preliminary Points; 2.2 Two Examples of Compositional Explanations and Concepts at Work in the Sciences; 2.2.1 Diamonds and Carbon Atoms: An Example of Intra-and Compositional Explanation; 2.2.2 Voltage-Sensitive Ion Channels and Their Protein Sub-Units: Another Example of Compositional Explanation; 2.3 Relations of Scientific Composition and their Features; 2.4 Composition in the Sciences: A Starting Framework; 2.4.1 Working Components and their Joint Role-Filling Relations: A General Account

2.4.2 Working Parts and Working Realizers: Joint Role-Filling and the Composition of Individuals ...2.4.3 A Promising Initial Framework and the Need for Future Work; 2.5 Rival Views of Scientific Composition and their Problems: Counting the Costs of Metaphysics for Science; 2.5.1 Why Manipulability (and Counter-Factual Dependence or Supervenience or Sufficiency) Accounts Fail: ...; 2.5.2 Why Standard "Functionalist" Accounts Fail: Role-Playing, Qualitative Distinctness, and a Lack of PEP; 2.6 A Beginning Framework on a Foundational Issue; Part II The Roots of Reduction

3 How to be a Scientific Reductionist

3.1 Scientific Composition and "Nothing But-tery": Appreciating Ontological Parsimony Arguments Utilizing ...; 3.2 Collectives, Aggregation, and the Macro-World of Scientific Reductionism: An Ultimate Scientific Image ...; 3.2.1 Scientific Reductionism, its Collectivist Ontology, and its Picture of Aggregation; 3.2.2 The Macro-World of Fundamentalism, its "Composition" and "Levels," Multiple Composition, and Complexity; 3.3 The Higher Sciences under Scientific Reductionism: Collective Phenomena and the Predicates of Higher Sciences

3.4 Objections to Scientific Reductionism: An Initial Assessment

Sommario/riassunto

Grand debates over reduction and emergence are playing out across the sciences, but these debates have reached a stalemate, with both sides declaring victory on empirical grounds. In this book, Carl Gillett provides new theoretical frameworks with which to understand these debates, illuminating both the novel positions of scientific reductionists and emergentists and the recent empirical advances that drive these new views. Gillett also highlights the flaws in existing philosophical frameworks and reorients the discussion to reflect the new scientific advances and issues, including the nature of 'parts' and 'wholes', the character of aggregation, and thus the continuity of nature itself. Most importantly, Gillett shows how disputes about concrete scientific cases are empirically resolvable and hence how we can break the scientific stalemate. Including a detailed glossary of key terms, this volume will be valuable for researchers and advanced students of the philosophy of science and metaphysics, and scientific researchers working in the area.
