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Nota di contenuto	Contents; Acknowledgments; Introduction; 1. Abductive, Presumptive, and Plausible Arguments; Abductive Inference; Peirce on the Three Types of Reasoning; Peirce on the Form of Abductive Inference; Scientific Discovery and Artificial Intelligence; Abductive Inference in Legal Evidence; Defeasible, Plausible, and Presumptive Reasoning; Tentative Definitions; Argumentation Schemes; Araucaria as a Tool for Argument Diagramming; 2. A Dialogue Model of Explanation; Types of Explanation; Models of Scientific Explanation; Simulation, Understanding, and Making Sense Scripts, Anchored Narratives, and ImplicationsThe Dialogue Model of Explanation; The Speech Act of Explanation; Dialogue Models of Scientific Argumentation and Explanation; Examination Dialogue and Shared Understanding; Dialectical Shifts and Embeddings; 3. A Procedural Model of Rationality; Computational Dialectics; Reasoning as Chaining of Inferences; Forward and Backward Chaining Rule-Based Systems in Artificial Intelligence; The Problem of Enthymemes; Multiagent Practical Reasoning; Bounded Rationality; 4. Defeasible Modus Ponens Arguments A Typical Case of Abductive Reasoning in Evidence LawArgumentation from Consequences; Defeasible Inferences and Modus Ponens; Conditionals and Generalizations; Abductive Inference in Medical Diagnosis; Introducing Defeasible Modus Ponens; Using Defeasible Modus Ponens as an Argumentation Scheme; 5. Abductive Causal Reasoning; Necessary and Sufficient Conditions; Forms of Causal

Argumentation; Argument from Correlation to Cause; Abductive Causal Reasoning in Law; Causal Abduction in Medical Examination and Diagnosis; Causal Reasoning as Dynamic Improvement of a Hypothesis The Thesis That Causal Reasoning Is Abductive Causal Explanations; The Chain of Reasoning in the Accident Case; Insights into Causal Argumentation Yielded by the Abductive Theory; 6. Query-Driven Abductive Reasoning; Argument Extrapolation by Chaining Forward; Colligation in Chaining Backward; The Form of Abductive Inference Revisited; Belief-Desire-Intention and Commitment Models; The Abductive Profile of Dialogue; Abduction as a Query-Driven Process; Discovery as an Open Process; Retraction of Commitment; The Four Phases of Abductive Reasoning; 7. Unsolved Problems of Abduction Abduction and Argumentation Schemes Enthymemes, Argumentation Schemes, and the Defeasible Modus Ponens Form of Reasoning; The Role of Examination in Science; Accounts and Explanations; The Problem of Inconsistency; How Abductive Reasoning Moves Forward by Examining Competing Accounts; Question-Answering and Critiquing Systems in Artificial Intelligence; Summary of Abduction as a Heuristic; Notes; References; Index

Sommario/riassunto

This book examines three areas in which abductive reasoning is especially important: medicine, science, and law. The reader is introduced to abduction and shown how it has evolved historically into the framework of conventional wisdom in logic. Discussions draw upon recent techniques used in artificial intelligence, particularly in the areas of multi-agent systems and plan recognition, to develop a dialogue model of explanation. Cases of causal explanations in law are analyzed using abductive reasoning, and all the components are finally brought together to build a new account of abd
