

1. Record Nr.	UNINA9910592979903321
Titolo	Diagrammatic Representation and Inference : 13th International Conference, Diagrams 2022, Rome, Italy, September 14–16, 2022, Proceedings // edited by Valeria Giardino, Sven Linker, Richard Burns, Francesco Bellucci, Jean-Michel Boucheix, Petrucio Viana
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783031151460 3031151461
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (386 pages)
Collana	Lecture Notes in Artificial Intelligence, , 2945-9141 ; ; 13462
Disciplina	006.6869 006.6
Soggetti	Artificial intelligence User interfaces (Computer systems) Human-computer interaction Data structures (Computer science) Information theory Computer programming Compilers (Computer programs) Computer science Artificial Intelligence User Interfaces and Human Computer Interaction Data Structures and Information Theory Programming Techniques Compilers and Interpreters Theory of Computation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Theoretical Perspectives -- Introducing the Diagrammatic Semiotic Mode -- 1 Introduction -- 2 A Multimodal Perspective on Diagrams -- 3 Multimodal Diagram Corpora -- 3.1 The Allen Institute for Artificial

Intelligence Diagrams Dataset -- 3.2 AI2D-RST - A Multimodally-Motivated Annotation Schema -- 3.3 Next Step: Adding Discourse-Driven Decomposition to AI2D-RST -- 4 Discussion -- 5 Conclusion -- References -- On Computing Optimal Linear Diagrams -- 1 Introduction -- 2 Preliminaries -- 3 Complexity of Linear Diagrams -- 4 TSP Model -- 4.1 Solving Linear Diagrams with TSP -- 4.2 Priorities for Sets -- 4.3 A Weighted Version -- 4.4 Hierarchical Constraints -- 5 Experiments -- 5.1 Setup and Test Data -- 5.2 Computing Optimal Linear Diagrams -- 5.3 Constraints -- 6 Conclusion -- References -- Visual Proofs as Counterexamples to the Standard View of Informal Mathematical Proofs? -- 1 Introduction -- 2 Azzouni's Counterexample to the Standard View -- 3 The Standard View of Mathematical Rigor and Proof -- 4 Mathematicians on Visual Proofs -- 5 Azzouni's Critique Towards the Standard View Revisited -- 5.1 Figure1 and the Corresponding Epistemic Process -- 5.2 Visual Proofs as Counterexamples to the Standard View? -- 6 Conclusion -- References -- Representational Interpretive Structure: Theory and Notation -- 1 Introduction -- 2 Representation Interpretation Theory/Notation - RIST/RISN -- 2.1 Four Schemas -- 2.2 Linking Schemas -- 3 Idioms: Higher-Order Structures -- 3.1 Collections -- 3.2 R-Dimension Idioms -- 3.3 Coordinate Systems -- 4 Diversity of Interpretations -- 5 Discussion -- References -- Mixing Colors, Mixing Logics -- 1 Introduction -- 2 Term Logics -- 3 Mixing Colors, Mixing Logics -- 4 Conclusions -- References -- Normatively Determined Propositions -- 1 Introduction -- 2 Formal Setting. 3 Geometrical Representations -- 4 Final Remarks -- References -- A Diagram Must Never Be Ten Thousand Words: Text-Based (Sentential) Approaches to Diagrams Accessibility Limit Users' Potential for Normative Agency -- 1 Introduction -- 2 Diagrammatic Representation and "Free Rides" -- 3 Accessibility Issues of Diagrams -- 4 Relationships of Constraints, Possibilities for Action, and Connections with Human Rights -- 5 Providing Normative Agency with Accessible Diagram Design -- 6 Conclusion -- References -- History -- Combing Graphs and Eulerian Diagrams in Eristic -- 1 Introduction -- 2 Current Research Results and Problems -- 3 Graph Theory -- 4 Interpretations and Discussion -- 5 An Example of a Controversy -- 6 Summary and Outlook -- References -- Taming the Irrational Through Musical Diagrams - from Boethius to Oresme and Nemorarius -- 1 Ratios, Measuring Intervals and Proportions -- 2 Epimoric Ratios as a Measure for Musical Intervals -- 3 Boethius Triangles and Nemorarius Webs -- 4 Geometric Division of the Pythagorean Tetraktys in Theory and Practice -- 5 Conclusion -- References -- A Database of Aristotelian Diagrams: Empirical Foundations for Logical Geometry -- 1 Introduction -- 2 Background and Motivation -- 3 Methodological and Technical Aspects -- 4 New and Future Research Directions -- References -- Origami and the Emergence of Hybrid Diagrams -- 1 Origami and Diagrams -- 2 Semiotic Representation in Mathematical Thinking -- 3 The Emergence of Hybrid Diagrams -- 3.1 The Mathematical Activity -- 3.2 The Work of Two Groups -- 3.3 Conclusions -- References -- On Lambert Quadrilaterals and Why They Cannot Be Diagrams (According to Lambert) -- 1 Introduction -- 2 Lambert's Methodological Remarks on Geometrical Diagrams -- 3 Lambert Quadrilaterals Versus Geometrical Diagrams -- 4 Lambert Quadrilaterals as Symbolic Knowledge -- 5 Conclusion. References -- Cognition and Diagrams -- Euler vs Hasse Diagrams for Reasoning About Sets: A Cognitive Approach -- 1 Introduction -- 2 Background -- 3 Related Work -- 4 Approach -- 4.1 Working Example

-- 4.2 Enactive Observation in Hasse Diagrams -- 4.3 Enactive Observation in Euler Diagrams -- 5 Discussion -- 6 Conclusions and Future Work -- References -- Evaluating Colour in Concept Diagrams -- 1 Introduction -- 2 A Brief Introduction to Concept Diagrams -- 3 Study Design -- 3.1 Information to be Conveyed -- 3.2 Colour Treatments -- 3.3 Training Diagrams and Explanations -- 3.4 Learning Effect Questions -- 3.5 Performance Phase Questions -- 3.6 Data Collection Method -- 3.7 Statistical Analysis Method -- 4 Study Execution and Statistical Analysis -- 4.1 Pilot Study -- 4.2 Main Study -- 5 Discussion -- 6 Conclusion -- References -- Tables as Powerful Representational Tools -- 1 Introduction -- 2 Tables and Their Features -- 3 Access to Global Information -- 4 Information Retrieval -- 5 Visualization of Relational Structure and Patterns -- 6 Operations on Tables -- 7 Tabular Manipulations of Structured Notations -- 8 Operations on Infinite Tables -- 9 Discussion -- References -- Why Scholars Are Diagramming Neural Network Models -- 1 Introduction -- 2 Background -- 2.1 Neural Models -- 2.2 Mental Models and Mental Operations for NN Diagrams -- 3 Diagram Content Relates to Conceptual Models -- 3.1 Heterogeneity in Representation -- 3.2 NN Models, Mental Models, Conceptual Models and Diagrams -- 4 Conclusion -- References -- A Formal Model of Aspect Shifting: The Case of Dot Diagrams -- 1 Introduction -- 2 Representation Systems -- 3 Modeling Aspect Shifting -- 4 Modeling Aspect Integration -- 5 Conclusion -- References -- How to Visually Represent Structure -- 1 Introduction -- 2 The Golden Rule of Iconic Representation. 3 Mechanisms of Structural Representation -- 3.1 Intrinsic and Extrinsic Mechanisms -- 3.2 Recursion for Higher Order Representation -- 4 A Simple Example -- References -- Aspect Shifting in Aristotelian Diagrams -- 1 Introduction -- 2 Aspect Shifting with Aristotelian (sub)diagrams -- 3 Conclusion -- References -- Epistemic Roles of Diagrams in Short Proofs -- 1 Introduction -- 2 Methods and Materials -- 2.1 Preparing the Corpus -- 2.2 Coding and Categorization -- 3 Types and Uses of Diagrams in Short Proofs -- 4 Epistemic Roles of Diagrams -- 4.1 Case Study 1 -- 4.2 Case Study 2 -- 5 The Epistemic Role of Diagrams in Short Proofs -- References -- Diagrams and Applications -- Ancillary Diagrams: A Substitute for Text in Multimedia Resources? -- 1 Introduction -- 1.1 An Example -- 2 Representations -- 2.1 External Versus Internal Representations -- 2.2 Descriptive Versus Depictive Representations -- 2.3 Reconciling Representations: Processing Implications -- 3 Constructing a Mental Model: Diagrams Instead of Text? -- 4 Repurposing Multimedia's Text Components -- 5 Ancillary Diagrams: Animated Alternatives -- 6 Discussion and Conclusion -- References -- Diagrams for Learning to Lead in Salsa Dancing -- 1 Introduction -- 2 About Functions of Diagrams in Dance -- 3 Learning to Lead in Advanced Salsa Dancing -- 4 An Existing Notational Scheme for Salsa Positions -- 5 Analyzing the Diagrammatical Scheme -- 6 Enlarging the Set of Salsa Positions -- 7 Characterizing Genuine Salsa Moves -- 8 Directions for Future Research -- References -- The Use of Diagrams in Planning for Report Writing -- 1 Introduction -- 2 Method -- 3 Results and Discussion -- 3.1 Students' Ability to Create Diagrammatic Plans -- 3.2 Views About Plan Construction -- 3.3 Qualitative Differences Between Diagram and Text Plans. 3.4 Differences Between Reports Constructed with Diagram and Text Plans -- 3.5 Factors that Influenced Students' Decisions on Planning Methods to Use -- 3.6 Conclusion -- References -- Logical Diagrams -- From Euler Diagrams to Aristotelian Diagrams -- 1 Introduction -- 2 Motivating Example and Theoretical Background -- 3 The Seven Euler

Diagrams for Two Sets and Their Corresponding Aristotelian Diagrams -- 4 Discussion and Future Research -- References -- Visualizing Polymorphisms and Counter-Polymorphisms in S5 Modal Logic -- 1 Introduction -- 2 Modal Formulas as Operations on Cubes -- 3 Modal Formulas as Relations on Cubes -- 4 Ratsa's Relations -- 5 Polymorphisms and Counter-Polymorphisms -- 6 Diagrams for Polymorphisms and Counter-Polymorphisms on A1 -- 7 Ratsa's Alleged Exclusive Polymorphism -- 8 Moody Truth-Functions -- 9 Conclusion -- References -- Representing Formulas of Propositional Logic by Cographs, Permutations and Tables -- 1 Introduction -- 2 Formation Trees -- 3 Graphs, Permutations and T-tables -- 4 Summary and Conclusion -- References -- The Notion of Diagrammatic Isomorphism in Venn-Peirce Diagrams -- 1 Historical Preliminaries -- 2 Venn-Peirce Diagrams for Syllogisms -- 2.1 On Diagrammatic Congruence -- 2.2 Diagrammatic Isomorphism (DI) -- 3 Beyond Validity and Invalidity -- 4 Concluding Remarks -- References -- Generalizing Aristotelian Relations and Diagrams -- 1 Introduction -- 2 The Traditional Aristotelian Relations -- 3 Generalizing the Aristotelian Relations and Squares -- 3.1 Generalized Aristotelian Relations -- 3.2 Generalized Squares of Opposition -- 4 The Generalization is a Proper Generalization -- 4.1 Generalized Relations and Relations Between Disjunctions -- 4.2 Generalized Relations and Sets of Traditional Relations -- 5 Using the Generalized Relations to Classify Traditional Diagrams.

5.1 Jacoby-Sesmat-Blanché hexagons.

---

Sommario/riassunto

8 chapters are available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com).

---