

ISD8

The Image Schema Day 2024

Proceedings of The Eighth Image Schema Day 2024
Bozen-Bolzano, Italy, November 27-28, 2024

co-located with
23rd International Conference of the Italian Association for
Artificial Intelligence (AI*IA 2024)

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The Eighth Image Schema Day (ISD8), November 27-28, 2024, Bozen-Bolzano, Italy



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CEUR Workshop Proceedings (CEUR-WS.org)

Preface

The Image Schema Day Workshop Series

Highly interdisciplinary, research on image schemas takes inspiration from the background in cognitive linguistics where Johnson (1987) described an image schema as “... a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience.” Today, the research area encompasses several disciplines interested in embodied cognition, spatiotemporal reasoning and abstract thinking.

Often thought of as cognitive patterns describing spatial relations and movements, image schemas are studied in psychology and linguistics as a format of thought, and applied in computer science and robotics as a means to represent complex concepts and model behaviour. Simultaneously, studies in visualisation, art and human-computer interaction use image schemas as a mental shortcut to capture meaning and produce incentives to action.

Being an interdisciplinary research field allows for a level of research emergence that rarely takes place in more traditionally focused disciplines. Building on that premise, the Image Schema Day (ISD) workshop series was introduced to provide a venue for people of any discipline to discuss their work. Since 2015, when the first ISD was held in Bozen-Bolzano as an invite-only experiment, the workshop series has grown in both size and disciplinary variance as each edition has consisted of a plethora of topics that all centred on that one central notion: image schemas and conceptual primitives.

The first five instances of the ISD were annually held in Bozen-Bolzano, Italy. The first two as independent invite-only events. ISD3 took part in the *Joint Ontology Workshops* (JOWO 2017) (see <https://www.iaoa.org/jowo/2017/>) and editions ISD4 and ISD5 were part in the first two instances of the umbrella event *TriCoLore: Creativity, Cognition and Computation* (see <https://tricolore.inf.unibz.it>). Spreading its wings, perhaps as a response to the pandemic travel restrictions, ISD6 was held in Jönköping, Sweden, for a 2-day independent workshop. ISD7 took part in the workshop program of The 20th International Conference on Principles of Knowledge Representation and Reasoning (KR 2023) on the beachfront adjacent to the turquoise waters of Rhodes, Greece.

The Eighth Image Schema Day (ISD8)

Returning to Bozen-Bolzano, the ISD8 workshop took part in the workshop program of the 23rd Conference of the Italian Association for Artificial Intelligence (AI*IA 2023) (see <https://aixia2024.events.unibz.it/>). As the city recently left the autumn season, it prepared for the region's largest Christmas market. Thus, the workshop participants experienced temperatures around zero degrees while bathing in the wonderful sunlight.

As one of the larger workshops at AI*IA, two days were filled with scientific presentations, keynotes and other intellectual exchanges.

The workshop's first keynote speaker was Prof. John Bateman from Bremen University (DE). He discussed the importance of image-schematic relationships in audiovisual communication in films. His talk “*Image schemas, cognitive metaphor, and film: bridging discourses*” engaged the audience by including a series of film sequences from everything from Hitchcock's horror movies to children's animation.

The second keynote speaker was Prof. Zoe Falomir from Umeå University (SE). In her talk “*Spatial representations and image schemas for symbol grounding and reasoning*” she kept the audience engaged by quizzing them on logical problem-solving by folding papers and twisting dice.

The workshop also included the tutorial “*Cognitively Inspired Reasoning for Reactive Robotics - From Image Schemas to Knowledge Enrichment*” hosted by Dr Mihai Hawkin¹ from Bremen University (DE), Dr Stefano De Giorgis from CNR-ISTC (IT), and Dr Nikolaos Tsiogkas from KU Leuven (BE). Through engaging presentations and hands-on activities, the tutorial offered the participants an opportunity to learn how to extract image-schematic relationships from video clips through a combination of computer vision and semantic technologies.

The final component of the workshop was a merger with the “ART AFTER AI” event, where the participants of ISD8 had the opportunity to attend the art exhibition followed by a joined panel on the topic “Crossing Educational Boundaries”, moderated by Antonella De Angeli (Free University of Bozen-Bolzano) and with the following panelists: John Bateman (University of Bremen), Federico Bomba (Free University of Bozen-Bolzano and Siniglossa), Gabriella Cortellessa (CNR - National Research Council of Italy), Monica Landoni (USI Università della Svizzera italiana), and Mateusz Miroslaw Lis (SophIA).

The papers in this volume have been peer-reviewed and they consist of the following topics: *Baur et al* presents work on using physical components for embodied representations of image schemas. *Neugaertner* takes a historic look into and analyses the graphical language of Isotype. *Hedblom* presents initial thoughts on how conceptual primitives from the five senses could be formally approached. *Olearo et al* talks about how diffusion models can approach conceptual blending. *Leemhuis and Kutz* presents an analysis of how “betweenness” can be considered an additional image-schematic notion. *Stufano Melone et al* takes a look at the urban landscape and performs an ontological analysis of the notion of a ‘square’. *De Giorgis and Righetti* use LLM in order to expand the image-schema catalog. *De Giorgis* uses LLMs for knowledge enrichment for the force image schema. *Nikolaienko* performs an analysis of the prevalence of left and right orientations in dream journals. *Diesner* presents the results of a pilot study on using an embodied approach of treating Broca’s aphasia.

¹Formerly Mihai Pomarlan

Contributions in this volume

Keynote

- *John Bateman.*
Image Schemas, Cognitive Metaphor, and Film: Bridging Discourses
- *Zoe Falomir.*
Spatial Representations and Image Schemas for Symbol Grounding and Reasoning

Tutorial Report

- *Mihai Hawkin, Stefano De Giorgis and Nikolaos Tsiogkas.*
Cognitively Inspired Reasoning for Reactive Robotics - From Image Schemas to Knowledge Enrichment

Abstracts for presentation only

- *Orfeas Chasapis Tassinis.*
Justice ‘Under’ Law? Image Schemas and Spatial Reasoning in Legal Discourse
- *Henri-Jacques Geiss, Justus Piater and Alejandro Agostini.*
Building a Curious Agent that Learns to Plan with Images Schemas

Papers

- *Cordula Baur, Fredrik Stamm, Carolin Wienrich and Jörn Hurlienne.*
Multimodal meets Intuitive? Comparing Visual and Tangible Image Schema Representations
- *Sandra Neugaertner.*
Generalized Between Icon, Symbol and Index: The Physical Dimension in Isotype and Unicode
- *Maria M. Hedblom.*
Beyond Space and Time: An Initial Sketch of Formal Accounts to Non-Spatiotemporal Conceptual Sensory Primitives
- *Lorenzo Olearo, Giorgio Longari, Simone Melzi, Alessandro Raganato and Rafael Peñaloza.*
How to Blend Concepts in Diffusion Models
- *Mena Leemhuis and Oliver Kutz.*
The Boat, the House and the In-Between: Conceptual Blending as Betweenness Relation
- *Maria Rosaria Stufano Melone, Stefano Borgo and Domenico Camarda.*
Image Schema and Ontology-based Rules to Support Planning Activities: A Study of the Urban Square
- *Stefano De Giorgis and Guendalina Righetti.*
“The Time for Action has Arrived”: Extending the IS Catalogue Leveraging Large Language Models
- *Stefano De Giorgis.*
May the FORCE be with Semantics: exploiting LLMs to Image Schematic Knowledge Enrichment

- *Valeriia Nikolaienko.*
Left-Right Spatial Orientation in Dream Reports: Image Schemas and Interactional Dynamics
- *Daniela Diesner.*
An Embodied Approach to Treating Aphasia: __ Missing __ Prepositions and Bringing Them In

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