ISD6
The Image Schema Day 2022

Proceedings of The Sixth Image Schema Day 2022

Mariedal, Jönköping University, Sweden, March 24-25, 2022

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The Sixth Image Schema Day (ISD6), March 24–25, 2022, Jönköping University, Sweden

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Preface

The Image Schema Day Workshop Series

For decades, the theory of image schemas has connected researchers from many scientific disciplines under one central idea: the notion that the body's sensorimotor experiences are captured into abstract, mental patterns used for understanding and reasoning. Often referred to as spatiotemporal relationships, image schemas construct the conceptual spaces for concepts related to notions like Containment, Source_Path_Goal and Blockage.

These kinds of patterns are studied for many purposes. Psychologists look at how such patterns are used in our thinking and behaviour. Linguists study how these patterns manifest in our language and other expressions. Designers and artists look at how such patterns influence design choices and our interpretations of particular constellations. Formal image schema research, for instance in AI and robotics, looks instead at how such patterns can be used to solve symbol grounding problems between formal representations and real-world objects.

It is both a strength and a weakness that image schemas are studied from so many different directions. On the one hand, it showcases and underlines the relevance and importance of this theoretical framework and provides a substantial research foundation as these patterns are investigated with varying methodologies. On the other hand, it has led to a terminological abundance and various differences in viewpoints, which can make it harder to reach mutual goals and engage in collaborative efforts. To rectify this situation, The Image Schema Day (ISD) workshop series was introduced to provide a cross-disciplinary platform for researchers with different areas of expertise to facilitate communication, mutual respect and understanding for different viewpoints, and to encourage joint research endeavours.

Due to its repeated success, the workshops in this series have been held already five times prior to Jönköping. Each time hosted by the Free University of Bozen-Bolzano, Italy, either as an event by invitation, or as a scientific workshop with paper submissions and anonymous peer review. The past two editions of ISD were held as part of the joint workshop conference *TriCoLore: Creativity, Cognition and Computation* (see https://tricolore.inf.unibz.it).

The Sixth Image Schema Day (ISD6)

After having been a yearly workshop series, the Sixth Image Schema Day was forced to be postponed due to the COVID-19 pandemic. Between 24–25th of March 2022 it was once again possible to physically gather and *The Sixth Image Schema Day* was held in the beautiful 1850's Villa Mariedal, Jönköping University's conference venue.

The workshop got 17 submissions, of which three abstracts were accepted for presentation at the conference and nine submissions were accepted for publication in the proceedings, summarised and listed below.

For the abstract presentations, *Wylecioł* presented a comparative analysis on the *[GO TO + preposition]* construal from a multi-lingual perspective. *Baur* presented work on how a research through design approach can be guided by use of physical artefacts based on image schemas. *Stufano Melone* presented an analysis on how architectural choices often are driven by image schema-based spatial reasoning.

The papers in this volume, span the full range of image schema investigations with research ranging from the interpretation of visuo-linguistic manifestations to research on formal representation and applications. Within this range, *Huber* presented work on how air traffic controllers' language and visualisations are heavily based on image-schematic metaphors. *Thiering* presented joint work with *Mittleberg* on a study looking at how the impossible situations found in the computer game 'Antichamber' are directly connected to image-schematic notions. *Hurtienne*'s paper, presented by *Baur*, introduced the audience to the ISCAT database, an open source dictionary for image-schematic notions used in inferface design.

Bourou presented formal work on how Hasse diagrams can be analysed using image-schematic reasoning for sense-making. *Hedblom* presented a first view of the Diagrammatic Image Schema Language DISL as a more structured method to be used to visualise image-schematic manifestations in either language or conceptualisations. *Pomarlan* and *Righetti* presented formal robotics research of how object properties should be functional descriptions based on what their involved image schemas allow for. *Tsiogkas* presented research on how an integration of image schemas could help guide robotic actions in an industrial setting. Finally, *Dhanabalachandran*'s research, presented by *Hedblom*, contains preliminary work on how it is possible to use image schemas in robotic action descriptions for the case of stacking objects.

Contributions

Accepted abstracts for presentation

In addition to the accepted papers in this volume, the workshop featured three talks based on abstracts accepted for presentation.

- *Ryszard Wylecioł.*
  Conceptualisation of the [GO TO + PREPOSITION] construal. Short analysis of differences between Italian, Spanish and French

- *Cordula Baur, Carolin Wienrich and Jörn Hurtienne.*
  Form Follows Mental Models: Instantiating Image Schemas as Physical Artifacts using a Research Through Design Approach

- *Maria Rosaria Stufano Melone, Stefano Borgo and Oliver Kutz.*
  Image Schemas and Ontology in Architectural Rules

Accepted papers

Presented in the order of the proceedings.

- Stefano *De Giorgis, Aldo Gangemi and Dagmar Gromann.*
  The Racing Mind and the Path of Love: automatic extraction of image schematic triggers in knowledge graphs generated from natural language

- Stephan *Huber, Patrick Schulz, Eric Hauke and Jörn Hurtienne.*
  Image Schematic Metaphors in Air Traffic Controllers' Language

- *Martin Thiering and Irene Mittelberg.*
  Image and Force Schemas Interacting in Digital Environments: The Computer Game 'Antichamber'

- *Jörn Hurtienne, Stephan Huber and Cordula Baur.*
  Supporting User Interface Design with Image Schemas: The ISCAT Database as a Research Tool

- *Dimitra Bourou, Marco Schorlemmer and Enric Plaza.*
  Embodied sense-making of diagrams as blending with image schemas

- *Maria M. Hedblom and Fabian Neuhaus.*
  Visualising Image Schemas: A Preliminary Look at the Diagrammatic Image Schema Language (DISL)

- *Mihai Pomarlan, Guendalina Righetti and John Bateman.*
  It Is What It Tends to Do: Defining Qualitative Parameter Regions by Their Effects on Physical Behavior

- *Nikolaos Tsiogkas.*
  Using image schemata to support autonomous assembly tasks

- *Kaviya Dhanabalachandran, Maria M. Hedblom and Michael Beetz.*
  Getting On Top of Things: Towards Intelligent Robotic Object Stacking through Image-Schematic Reasoning

Organisation and Participants

Workshop Chairs and Proceedings Editors

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Oliver Kutz	Free University of Bozen-Bolzano, Italy

Program Committee

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