

Preface for the Proceedings of the First Workshop on Cognitive Aspects of Knowledge Representation

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CAKR22, the first *workshop on cognitive aspects of knowledge representation*, was part of the workshop programme of the 31st International Joint Conference on Artificial Intelligence (IJCAI-ECAI 2022), and took place on Saturday July 23rd 2022 in Vienna, Austria.

The scope and aim of the workshop was the following. Knowledge representation is a lively and well-established field of AI, where knowledge and belief is represented declaratively and suitable for machine processing. It is often claimed that this declarative nature makes knowledge representation cognitively more adequate than e.g. sub-symbolic approaches, such as machine learning. This cognitive adequacy has important ramifications for the explainability of approaches in knowledge representation, which on its turn is essential for the trustworthiness of these approaches. However, exactly how cognitive adequacy is ensured has been often left implicit, and connections with cognitive science and psychology have only recently been taken up.

The goal of this workshop was to bring together experts from fields including artificial intelligence, psychology, cognitive science, and philosophy to discuss important questions related to cognitive aspects of knowledge representation, such as:

- How can we study the cognitive adequacy of approaches in AI?
- Are declarative approaches cognitively more adequate than other approaches in AI?
- What is the connection between cognitive adequacy and explanatory potential?
- How to develop benchmarks for studying cognitive aspects of AI?
- Which results from psychology are relevant for AI?
- What is the role of the normative-descriptive distinction in current developments in AI?

The keynote talk of the workshop was given by Ruth Byrne, Professor of Cognitive Science, Trinity College Dublin, and was titled *Knowledge representation: Evidence from the cognitive science of counterfactual reasoning*.

This volume contains the papers and extended abstracts accepted for presentation at the workshop. There were 10 submissions adhering to the submission instructions (4 as an extended abstract, and 6 as a full paper). Of the papers that were submitted, 4 full papers were accepted as full papers, and one was accepted as an extended abstract, and all 4 extended abstracts were accepted as such. Reviewing was inclusive, i.e. they ensured relevance for the workshop and basic quality control. 4 full papers were accepted as full papers, and one was accepted as an extended abstract, and all 4 extended abstracts were accepted as such.

We thank the expert reviewers for their diligent work. We are grateful to Ruth Byrne for delivering an exciting and inspiring keynote talk. Lastly, we thank the South African Centre for Artificial Intelligence Research (cair.org.za) for their financial support, and the organizing committee of IJCAI-ECAI 2022 for providing an animating environment for the workshop.

CAKR'22: *Cognitive Aspects of Knowledge Representation, IJCAI-ECAI 2022 Workshop, July 23–29, 2022, Vienna, Austria*

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