Preface

Reasoning is a core ability in human cognition. Its power lies in the ability to theorize about the environment, to make implicit knowledge explicit, to generalize given knowledge and to gain new insights. It is a well researched topic in cognitive psychology and cognitive science and over the past decade impressive results have been achieved. Early researchers often used propositional logic as a normative framework with its well-known deficiencies. Central results like findings from the Wason selection task or the suppression task inspired a shift from propositional logic and the assumption of monotonicity in human reasoning towards other reasoning approaches. This includes but is not limited to models using probabilistic approaches, mental models, or non-monotonic logics.

Automated deduction, on the other hand, is mainly focusing on the automated proof search in logical calculi. And indeed there is tremendous success during the last decades. Recently a coupling of the areas of cognitive science and automated reasoning is addressed in several approaches. For example there is increasing interest in modeling human reasoning within automated reasoning systems including modeling with answer set programming, deontic logic or abductive logic programming. There are also various approaches within AI research for common sense reasoning.

The goal of this workshop is to bring together leading researchers from artificial intelligence, automated deduction, computational logics and the psychology of reasoning that are interested in a computational foundations of human reasoning – both as speakers and as audience members. Its ultimate goal is to share knowledge, discuss open research questions, and inspire new paths.

In total, nine papers were submitted to the workshop. From these, eight have been accepted for presentation. The papers present the following strands: cognitive models, logic programming approaches to model human reasoning; syllogistic reasoning; computational models for human reasoning.

Finally, the Bridging-17 organizers seize the opportunity to thank the Program Committee members for their most valuable comments on the submissions, the authors for inspiring papers, the audience for their interest in this workshop, the local organizers from the CogSci 2017 team, and the Workshops Chairs.

We hope that in the years to come, Bridging will become a platform for dialogue and interaction for researchers in both cognitive science and automated reasoning and will effectively help to bridge the gap between human and automated reasoning.

November, 2017   Ulrich Furbach
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