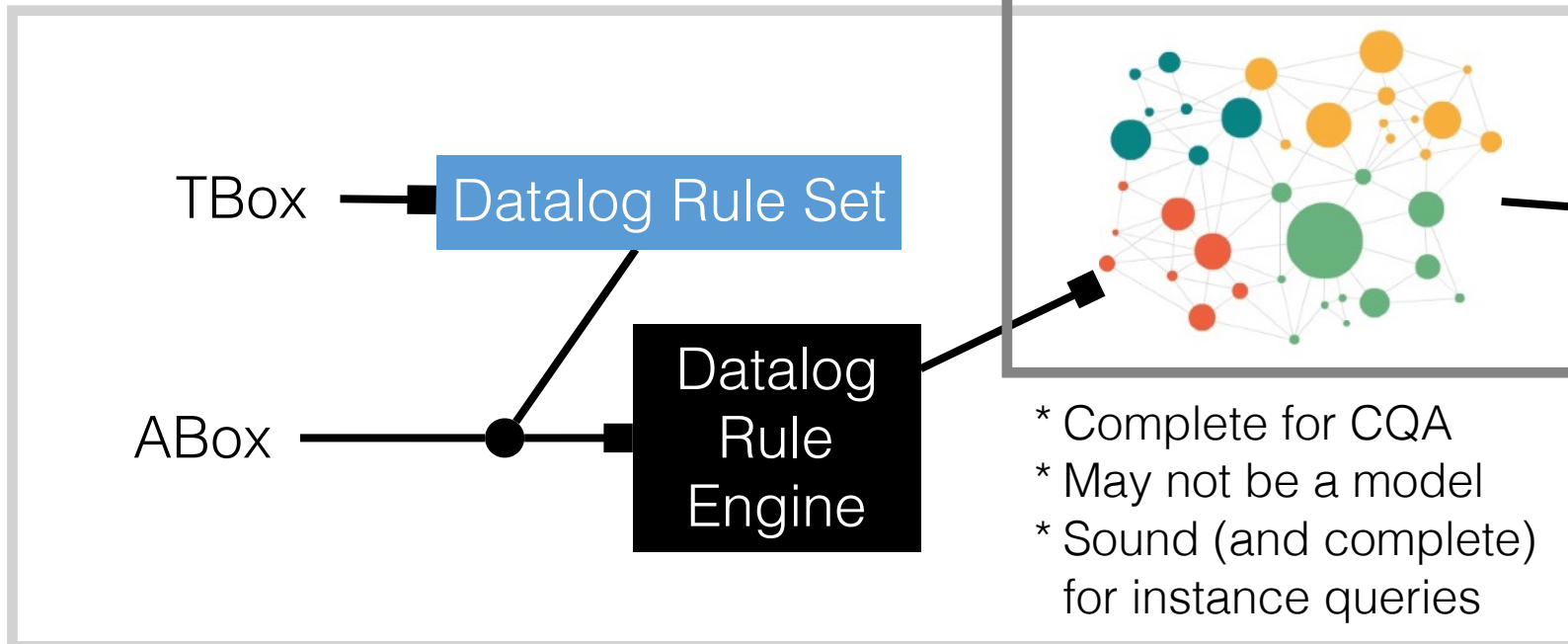


# The Combined Approach to Query Answering in Horn-*ALCHOIQ*

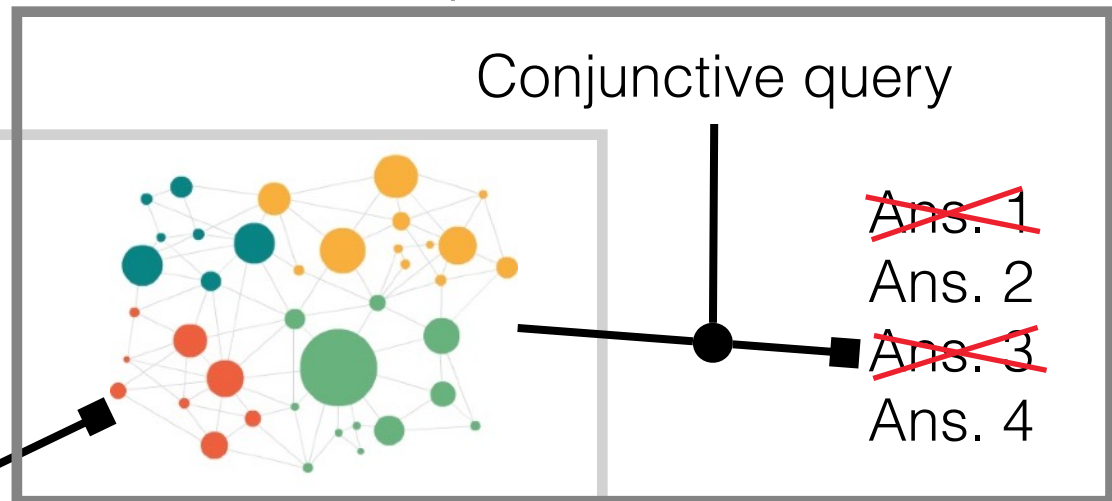
David Carral, Irina Dragoste, and Markus Krötzsch

In Principles of Knowledge Representation and Reasoning 2018

## 1. Materialisation Step



## 2. Filtration Step



- \* Complete for CQA
- \* May not be a model
- \* Sound (and complete) for instance queries

# The Combined Approach to Query Answering in Horn-*ALCHOIQ*

David Carral, Irina Dragoste, and Markus Krötzsch

In Principles of Knowledge Representation and Reasoning 2018

## Contributions

1. First combined approach for a non-tractable DL fragment
2. Worst-case optimal for standard reasoning and CQ answering for Horn-*ALCHOIQ* and *EL*
3. Develop an implementation to solve standard reasoning tasks
4. Conduct an empirical evaluation that shows performance gains over state-of-the-art DL reasoners