

Automated Dialogue-Based Ontology Elicitation

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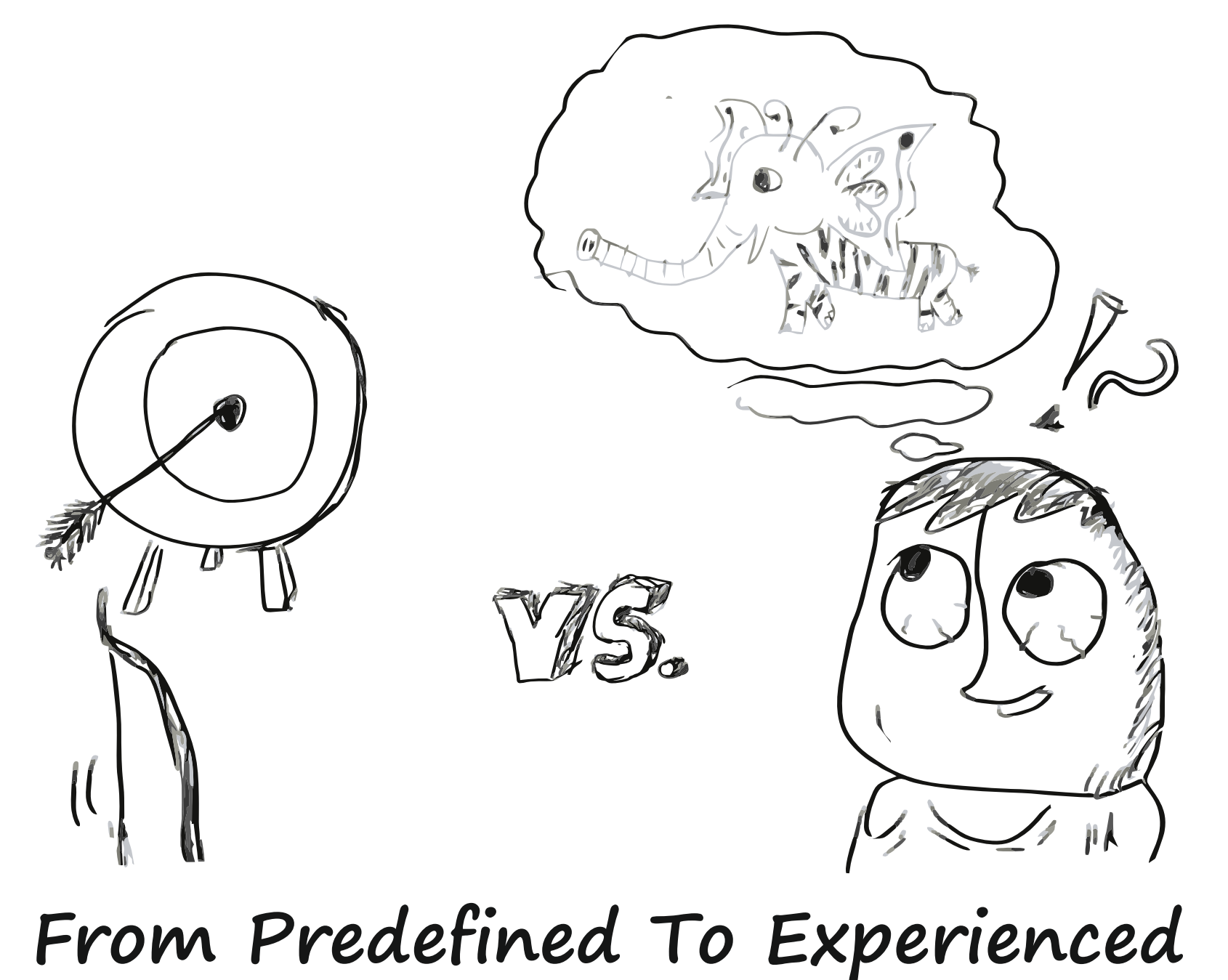
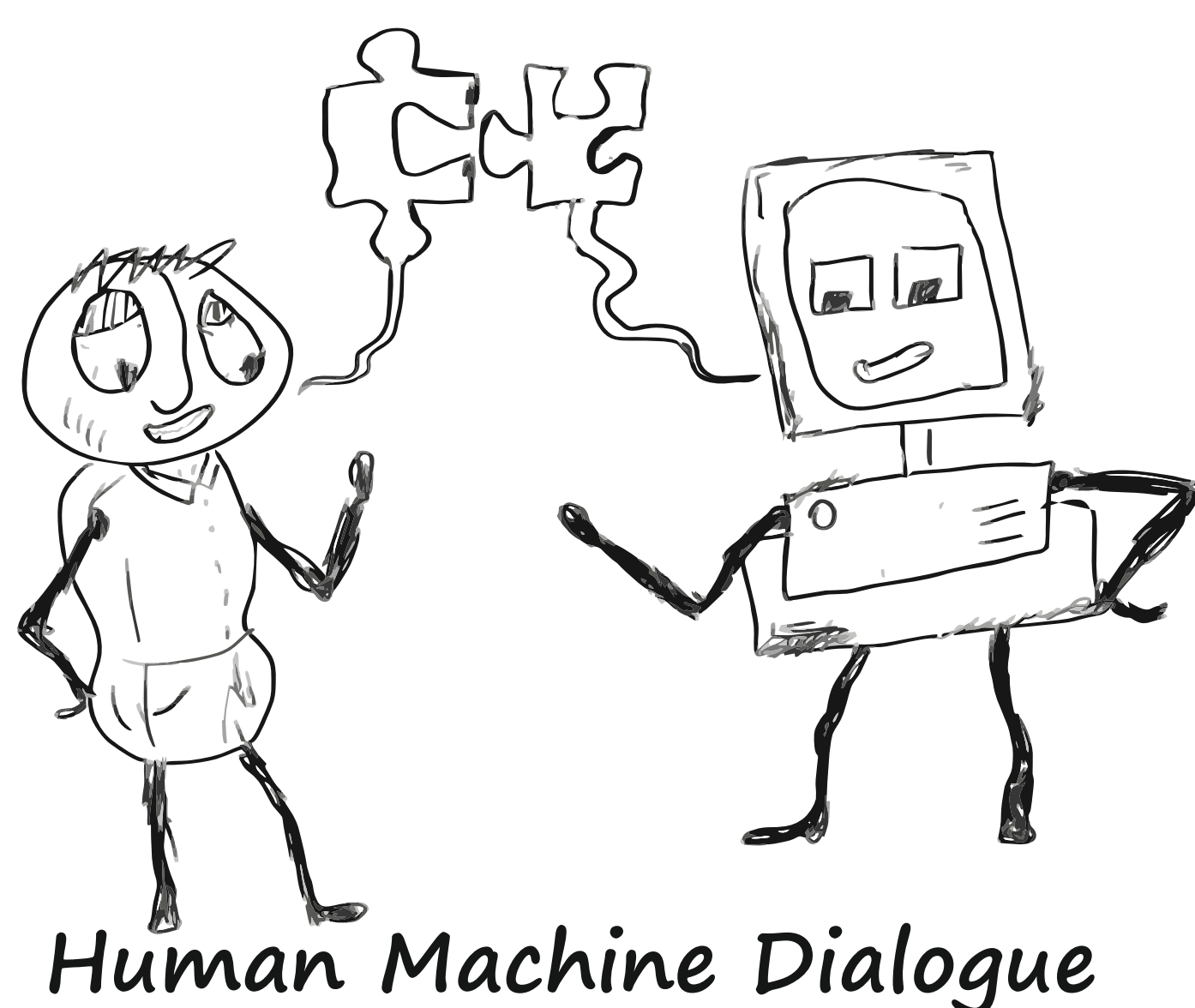
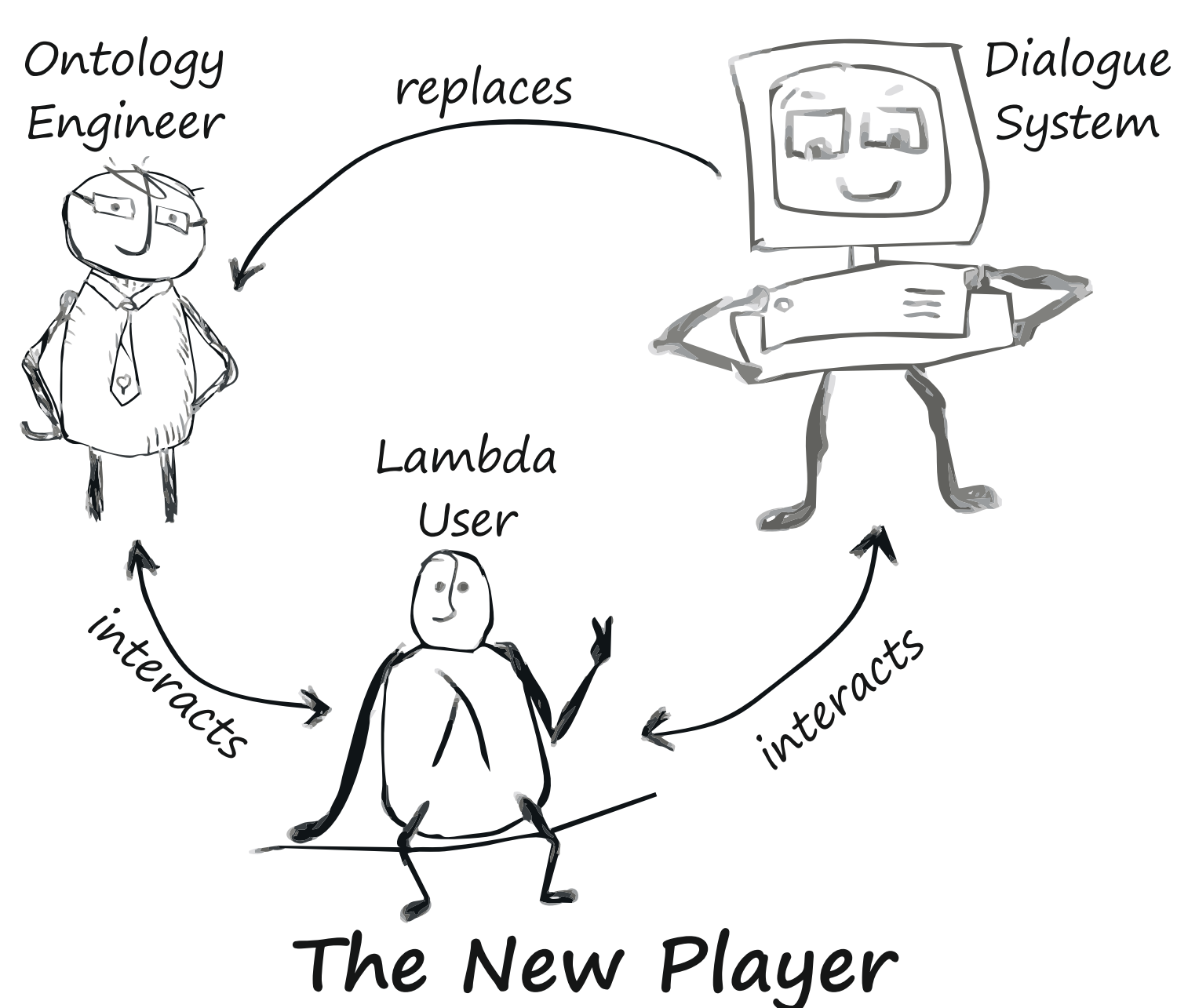
1. Abstract

This poster presents the work in progress aiming to elaborate a solution for automated dialogue-based ontology elicitation. Fusion of knowledge elicitation and ontology learning techniques into ontology elicitation techniques can be interactively applied to automatically develop domain ontologies without involvement of knowledge engineer. This is done with a dialogue system implementing ontology elicitation techniques and applying them as an elicitation dialogue plan. Simulating active listening plays an important role in the process of ontology elicitation and has an impact on the resulting ontology.

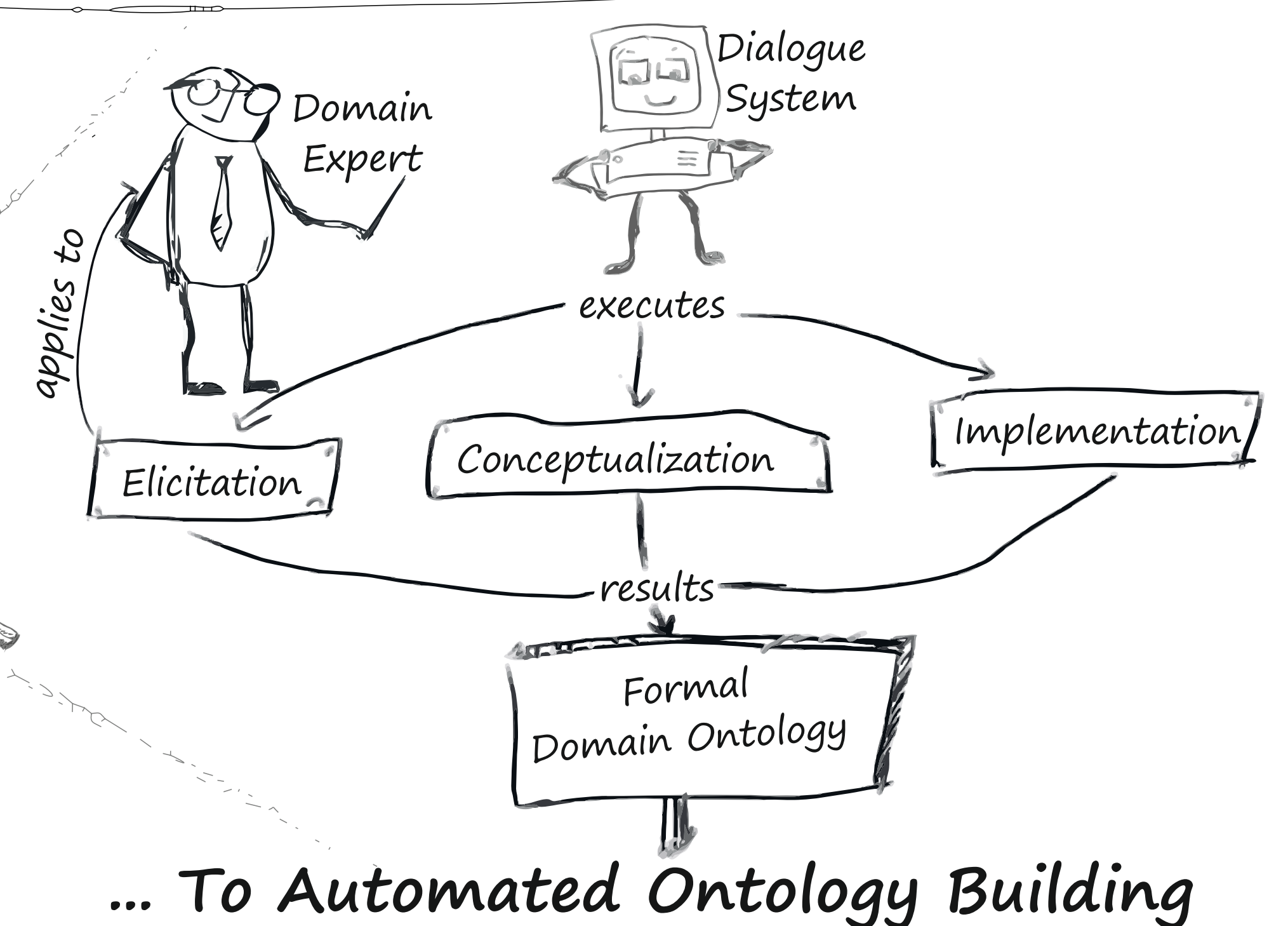
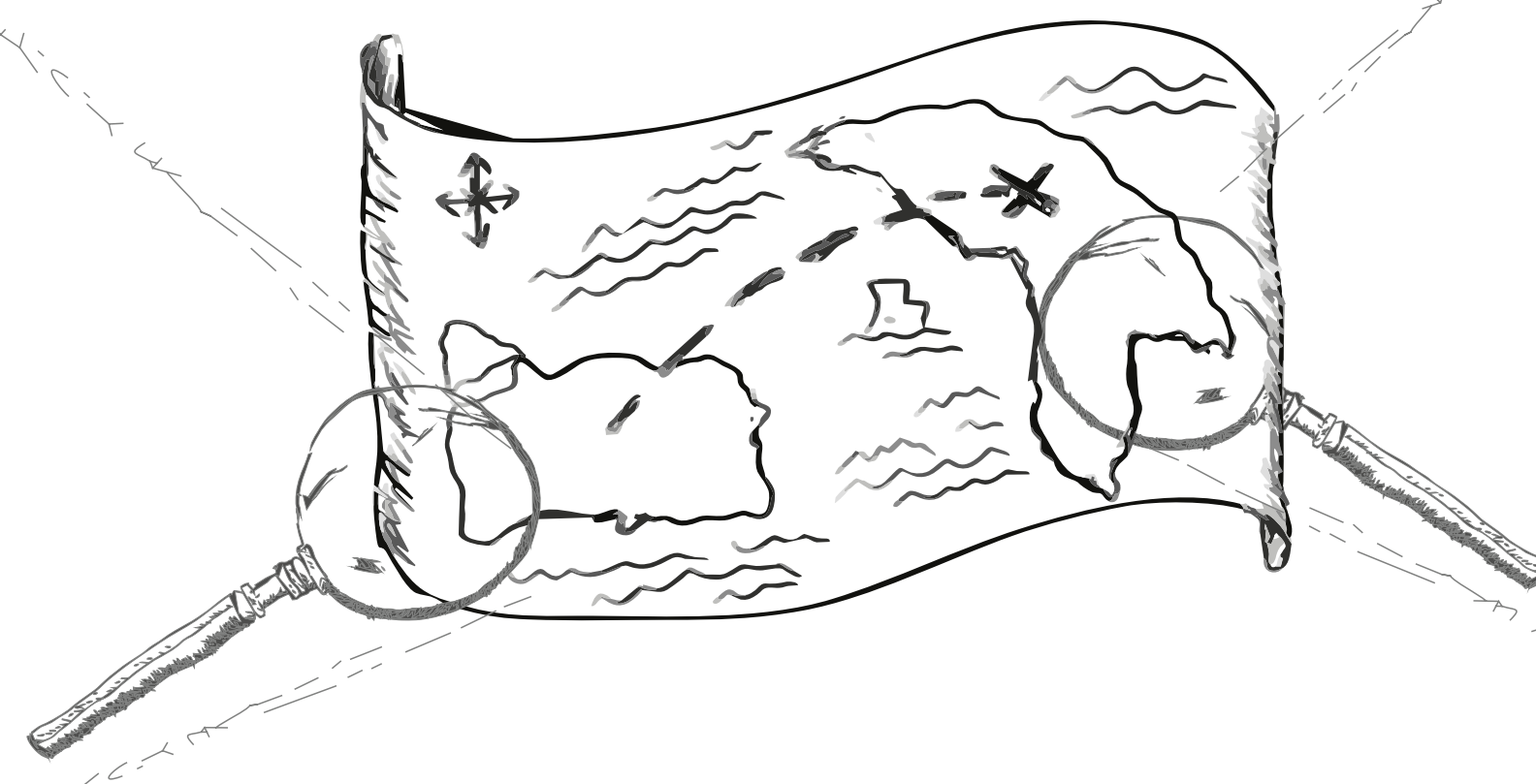
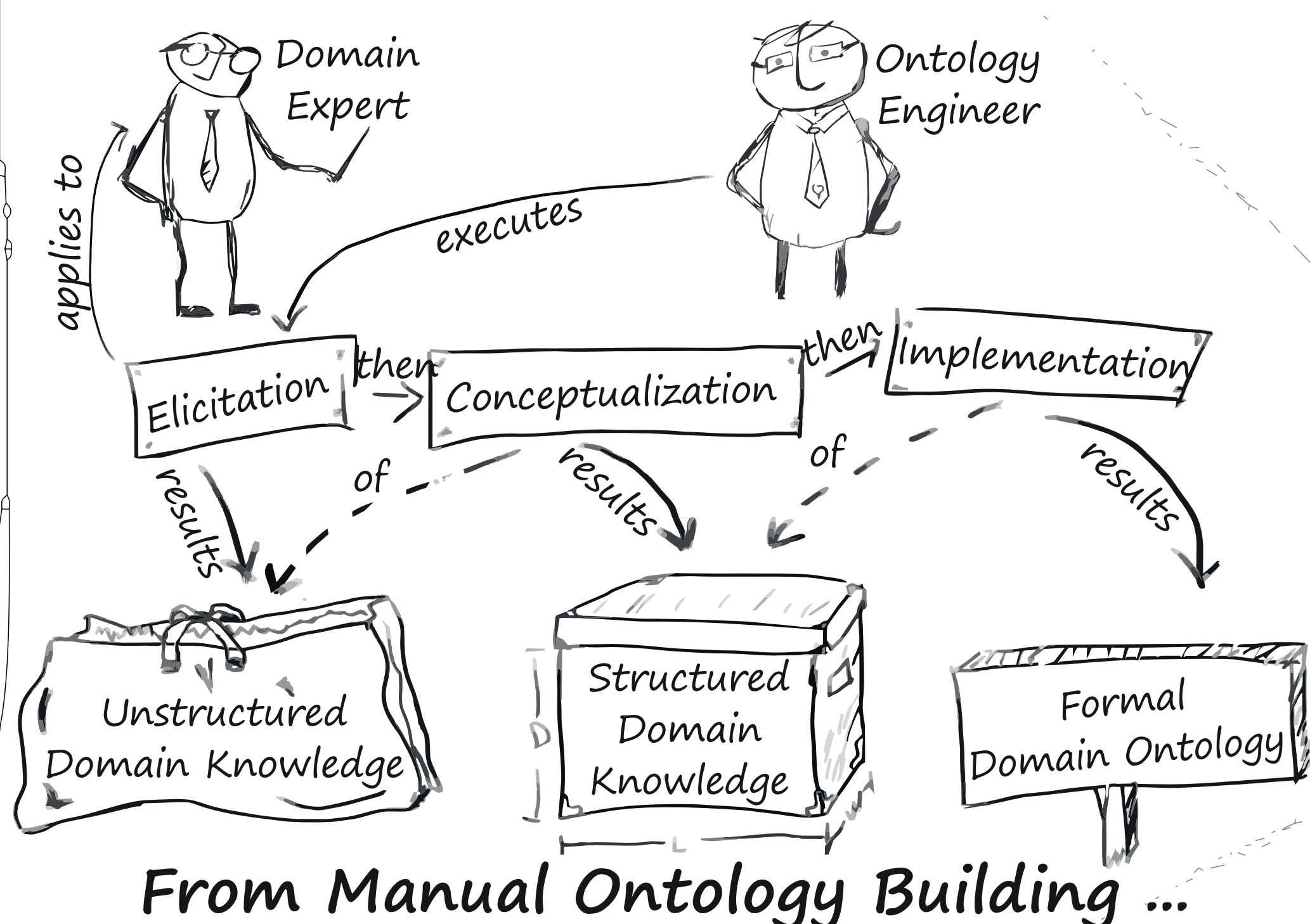
2. Addressed Issues

- The lack of a common reliable model to precisely describe knowledge elicitation techniques prevents these techniques from being combined in a consistent manner and makes them a subject to various interpretations during their execution.
- Ontology learning techniques are thought out as tools in the hands of the expert; hence they are missing the interactivity and proactivity characteristics. Ontology learning techniques imply processing the initial static input data and do not involve any interaction with the user to request information and interpret it.

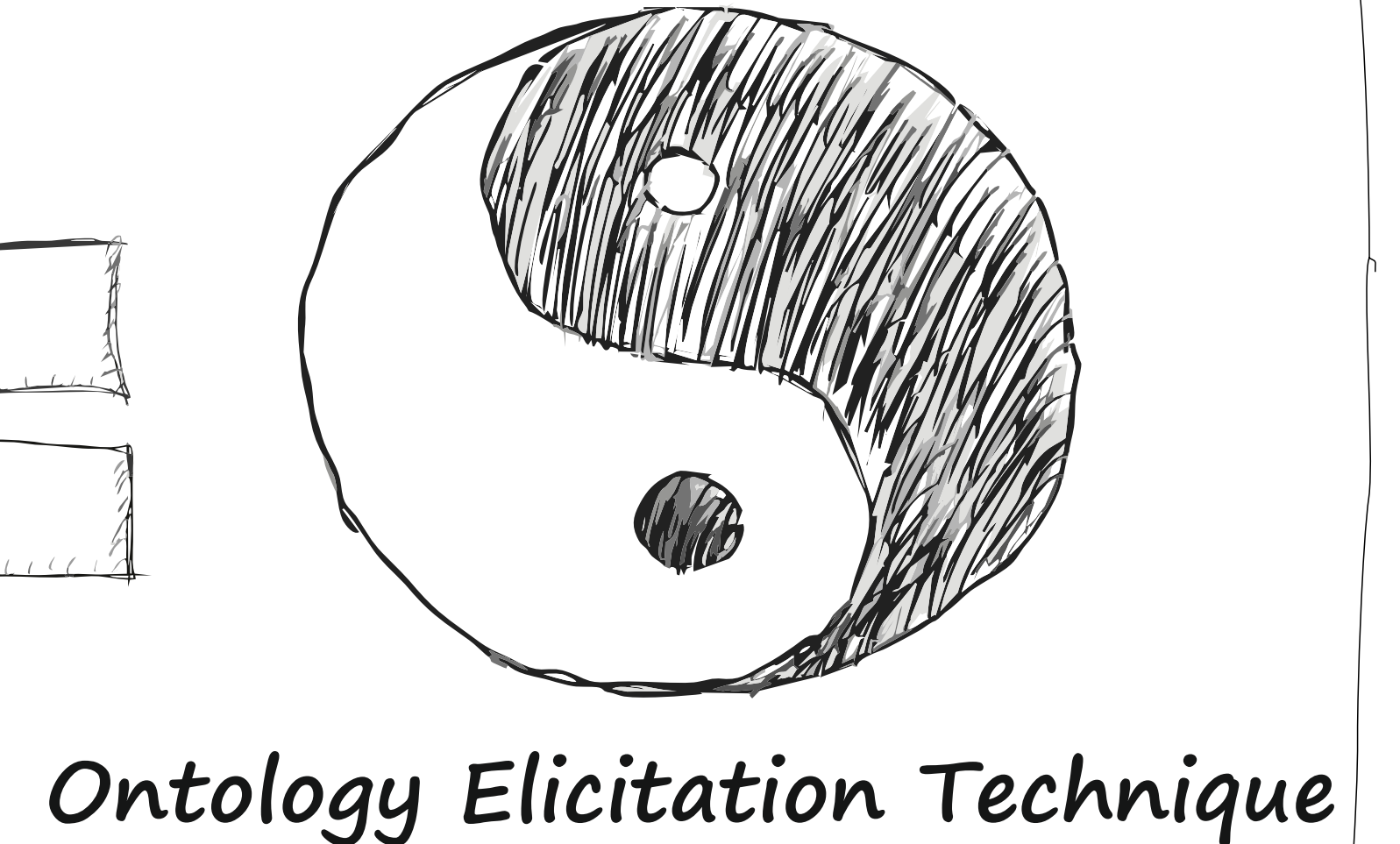
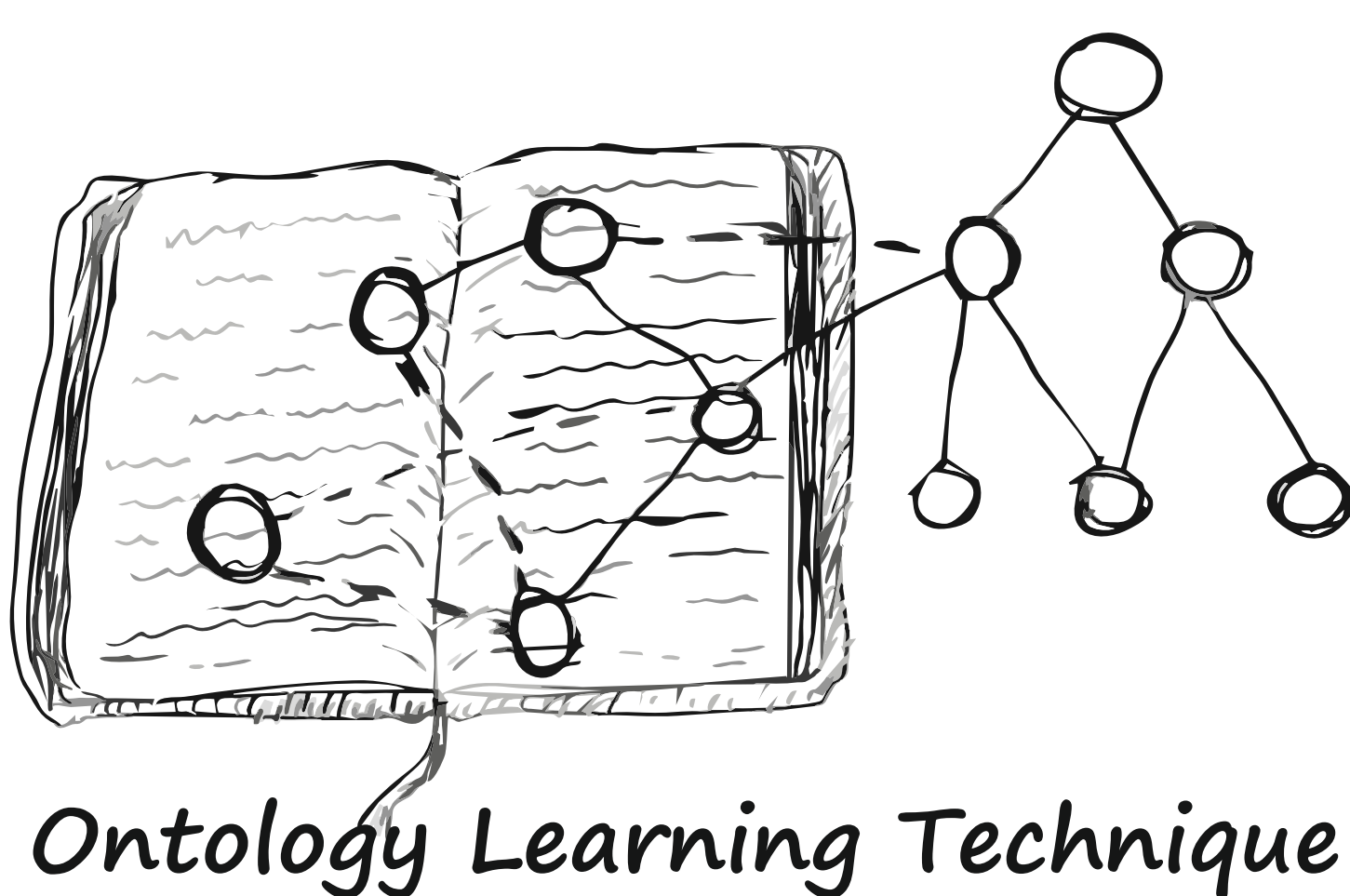
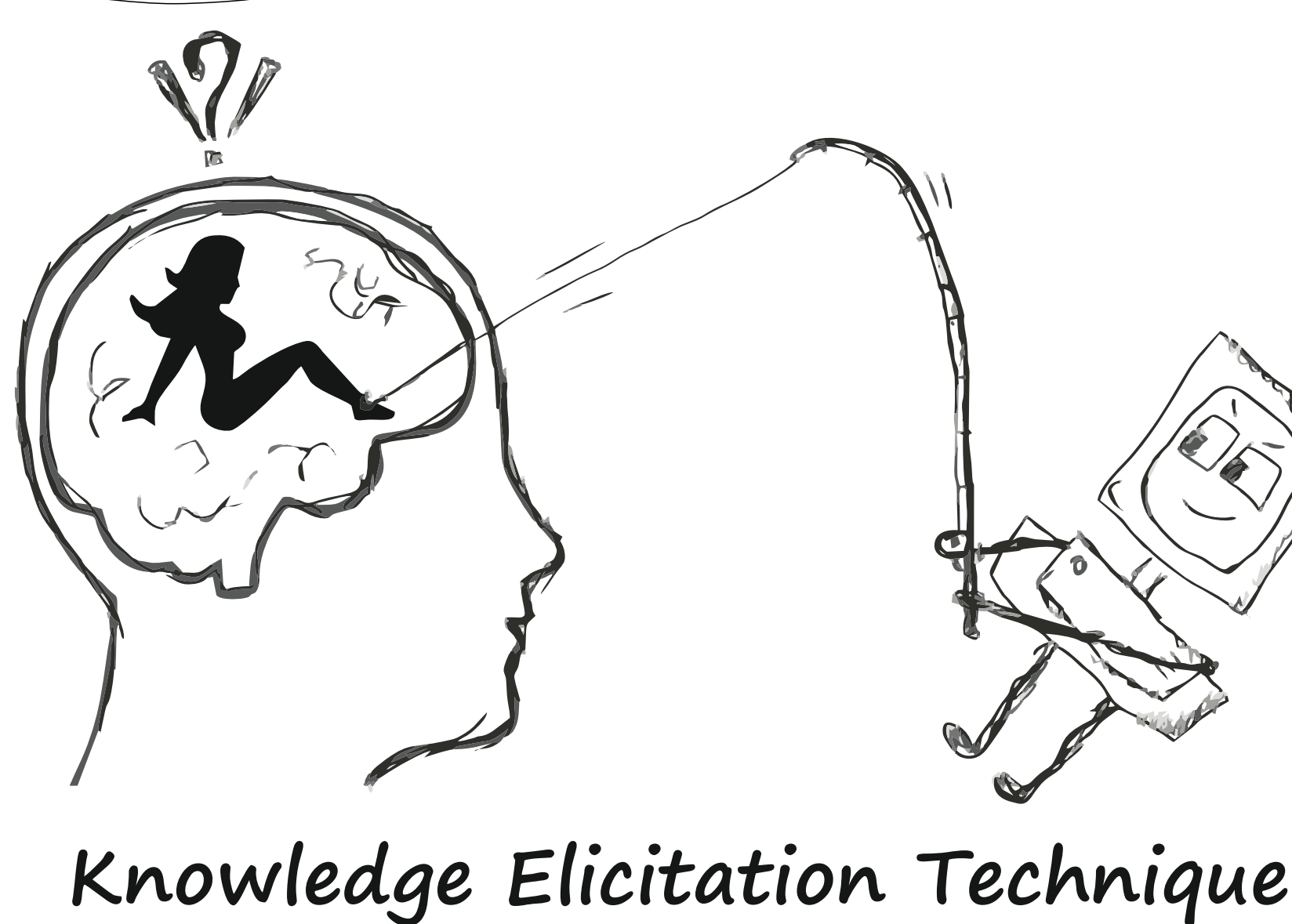
3. New in Ontology Engineering



4. Ontology Building



5. The Approach



6. Research Questions

- How to describe knowledge elicitation techniques?
- How to model the interpretation mechanism?
- What is the impact of different combinations of elicitation techniques on the quality of the acquired ontology?
- What is the impact of the active listening on the quality of acquired ontology?
- Which elicitation techniques are suitable for discovering the different ontology primitives (e.g., classes, instances, properties, relationships, etc.)?

7. Research Objectives

- Design a model to describe elicitation techniques - acquired data structures, interaction protocols, algorithms for the formal analysis of the result data, and interaction interpretation mechanisms in terms of underlying data structure
- Develop a mechanism for interpretation of the elicited ontological information (based on the underlying data structure and their meaning in terms of ontological primitives)
- Develop and evaluate a dialogue-based system for ontology elicitation and encoding.