Agents to the Rescue

Creating Artificial Labs for Evaluating Human-Centric and Coupled Human-Natural Systems

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ima Intelligent Modelling & Analysis

My Research Interest

- Technical Aspects of ABM
  - Model development strategies
  - Coupling different types of agents
  - Coupling different paradigms
  - Treating concepts as agents

- Application of ABM in different domains

The Issue

- Anecdotal evidence suggests that the Agent-Based Social Simulation community suffers from a **lack of structured and standardised ways** for "driving" **model development**

- It would be good to have a structured approach ...
  - ... to support **multi-disciplinary collaboration**
  - ... to work with **all kinds of stakeholders** (academics / non academics)
  - ... for **exploratory** and **explanatory** studies
  - ... for **communication; conceptual modelling; reverse engineering**

Our Attempt Towards a Solution

- We have created a **model development strategy (EABSS)**
  - Grounded on the concepts of co-creation (using focus groups)
  - Uses tools and techniques from Software Engineering

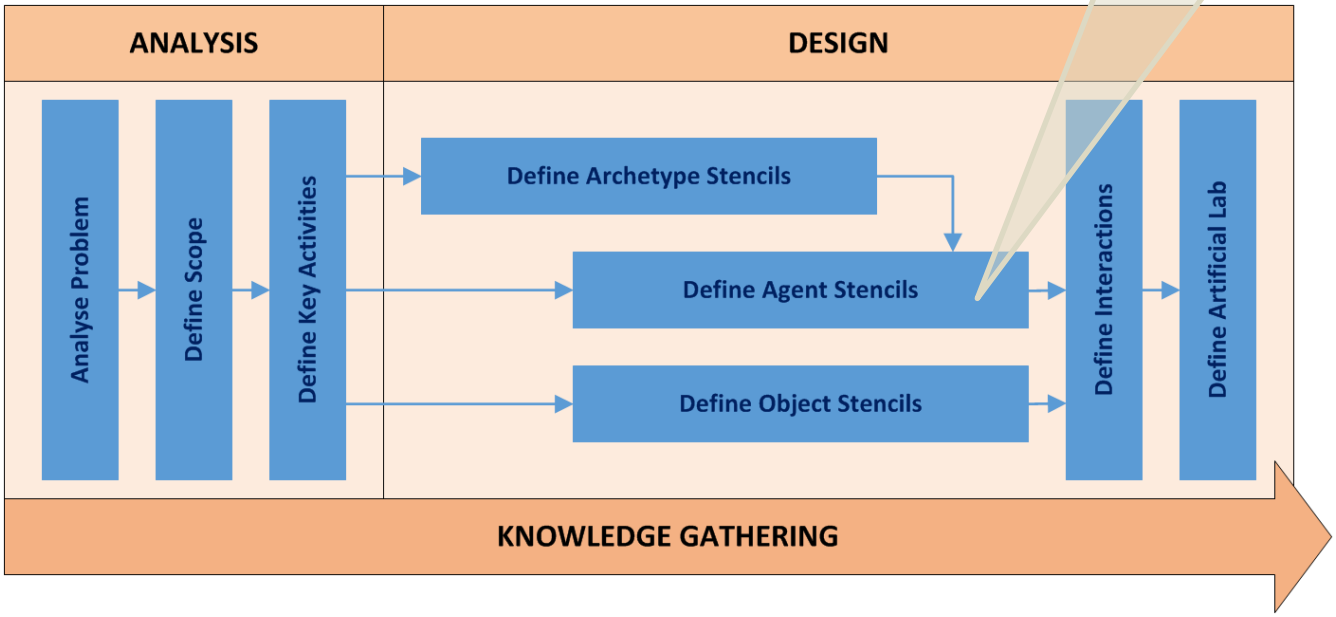
- EABSS has been used for
  - Collaborative **model development** and **documentation**
  - Stimulate and formally support **discussions** (e.g. for idea generation)

- We have tested it in **several domains**
  - Architecture; Geography; Organisational Behavior; Mental Health

Engineering Agent-Based Social Simulations

- Model development process (base path)
  - In reality it is an **agile** and **iterative** process
  - Uses predefined **table templates** and **UML**

How to embed qualitative and quantitative evidence?



Inspired by Siebers and Klügl (2017)

My Dream / Wish

- It would be great if I could go home with some concrete ideas for an extension of the EABSS that would **drive the generation of concepts for embedding qualitative and quantitative evidence** into the models that are developed using the EABSS

References

- Siebers and Klügl (2017). What Software Engineering has to offer to Agent-Based Social Simulation. In: Edmonds and Meyer (eds). Simulating social complexity: A handbook - 2e, Springer.