Agents to the Rescue

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

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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

![Diagram of Applications: Economics, Built Environment, Social Science, Human Factors, Politics, Health, Business]
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**

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