The Unintended Consequences of Ignoring Evacuee Response

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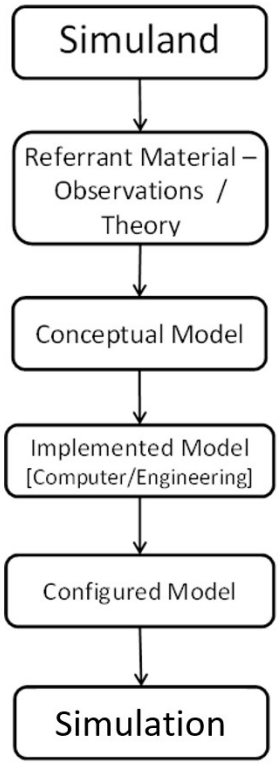
Structure of Presentation



- It is critical to be skeptical of computational evacuation models – as it is with all modelling efforts
- However, it is just as important to understand what constitutes a model
    - Discussion of various approaches to modelling
- The key is that skepticism and curiosity is maintained (or increased) but applied to all modelling endeavours.

- The Conceptual Model of Evacuee Response
    - Testing the basic understanding –logic, but also scope, refinement, moderation, translation, etc.
    - The benefits and dangers of an analogy
    - *Example: The Procedural Implications of Adopting Different Conceptual Models*

- Deductive Approaches
    - At a very minimum – for Scenario Development
    - State initial assumptions (based on conceptual understanding) and derive consequences that follow
    - *Example: The Impact of Social Groups on Large Crowds*

- Inductive Approaches – The Bread and Butter of computational modelling
    - Projecting outcomes with a reasonable degree of confidence based on the credibility of our conceptual understanding and the process by which it translates initial conditions to a future projected state.
    - Importance of understanding the active agents and the modes by which emergent conditions are produced – agent decision-making and agent interaction
    - *Example: The stages of evacuee interaction with emergency signs*

- Abductive Approaches – Pragmatic attempts to develop candidate explanations
    - Imperfect by definition – affirming the consequent by design
    - Assessing behavioural explanations by bounding the conditions
    - *Demonstration: Testing candidate explanations*

- The cascading impact of evacuation models on fire modelling
    - *The evil door and its pervasive impact on outcomes*

- *Concluding Remarks*