

Rearranging the Deck Chairs on the Titanic

A Simulation Model Of Behavioral Resource Utilization Under Crisis

James E. Paine

MIT Sloan School of Management – System Dynamics Group

BACKGROUND & SUMMARY

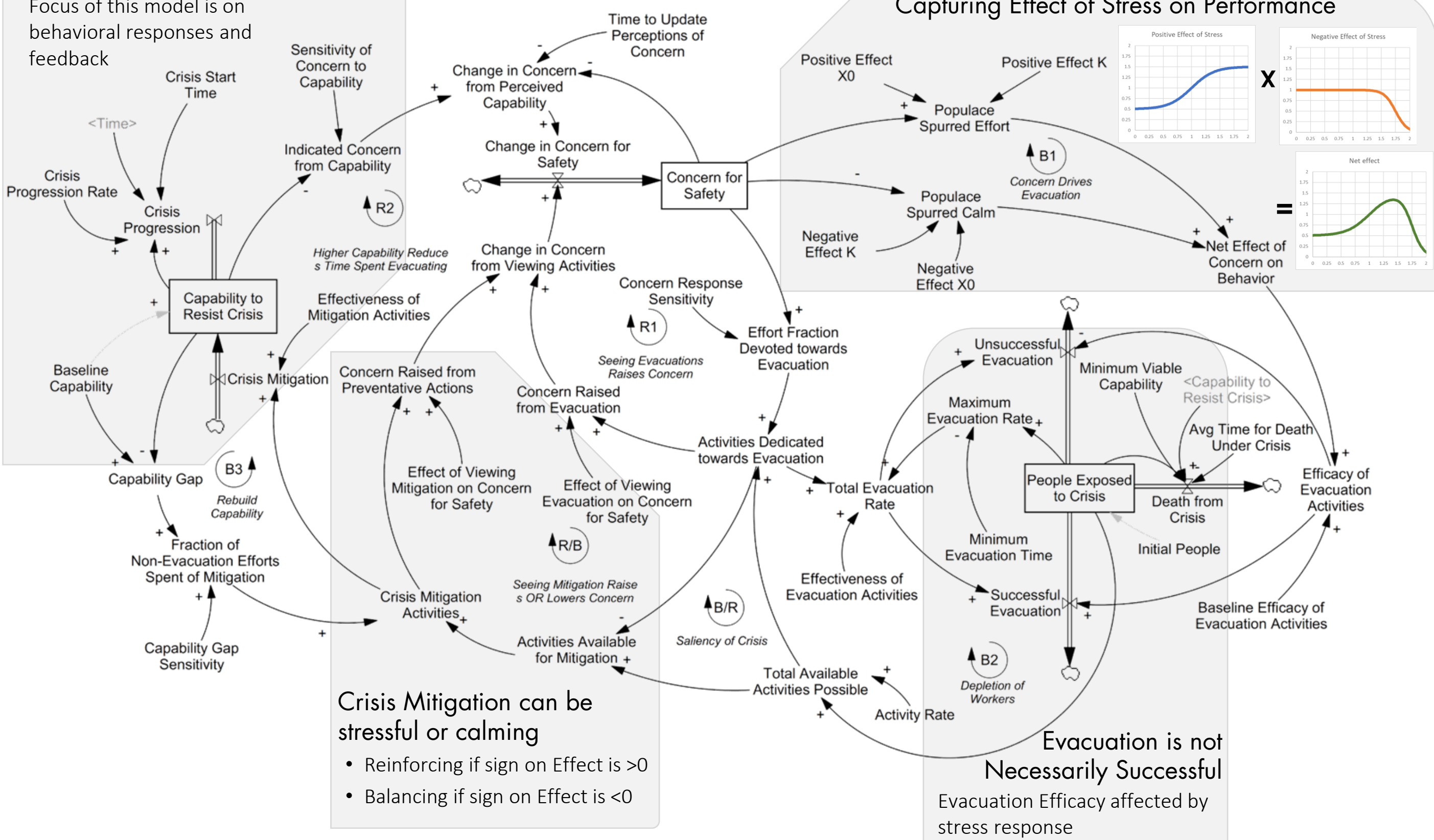
- “Rearranging the deck chairs on the Titanic is used metaphorically “to occupy oneself with some trivial activity while ignoring something much more important.”
- Mitigation activities during crisis can have two purposes: buying time and calming people down.
- Under what circumstances could “rearranging the deck chairs” or any possibly preventative, even seemingly trivial, activity during a crisis be helpful?

- This work presents a **compartmental differential equation model** that explores the interplay of **stress** response and action **efficacy** in group survivability during a crisis
- Highlights that calming but even marginally effective mitigation activities can stabilize or improve crisis outcomes, while a calming but totally non-effective mitigation activity can severely worsen outcomes

MODEL STRUCTURE AND KEY MECHANISMS

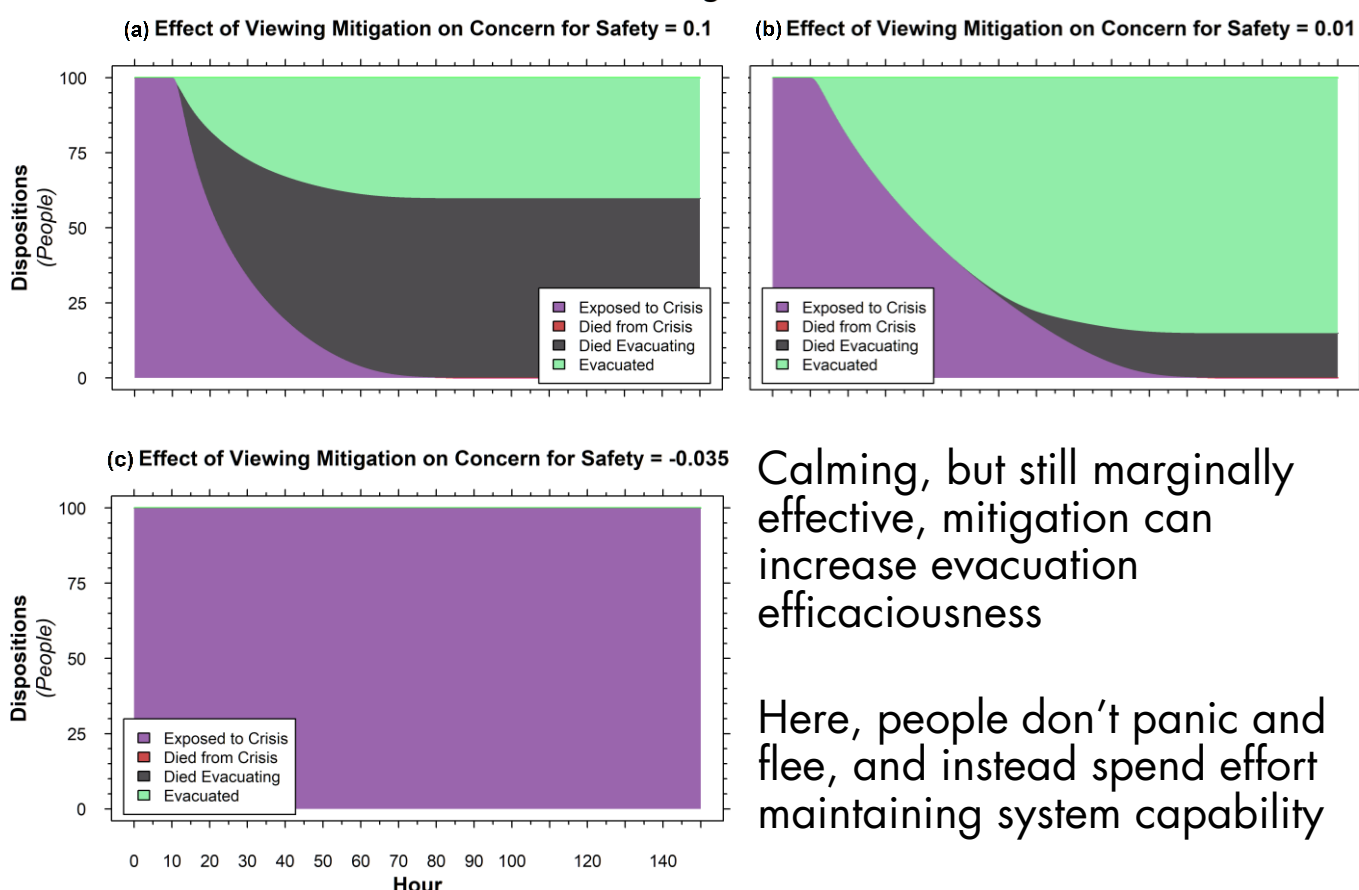
Context-Dependent ‘physics’ of the crisis are aggregated

Focus of this model is on behavioral responses and feedback



Varying Stress Effect of Mitigation

Effectiveness of Mitigation Activities = 0.01

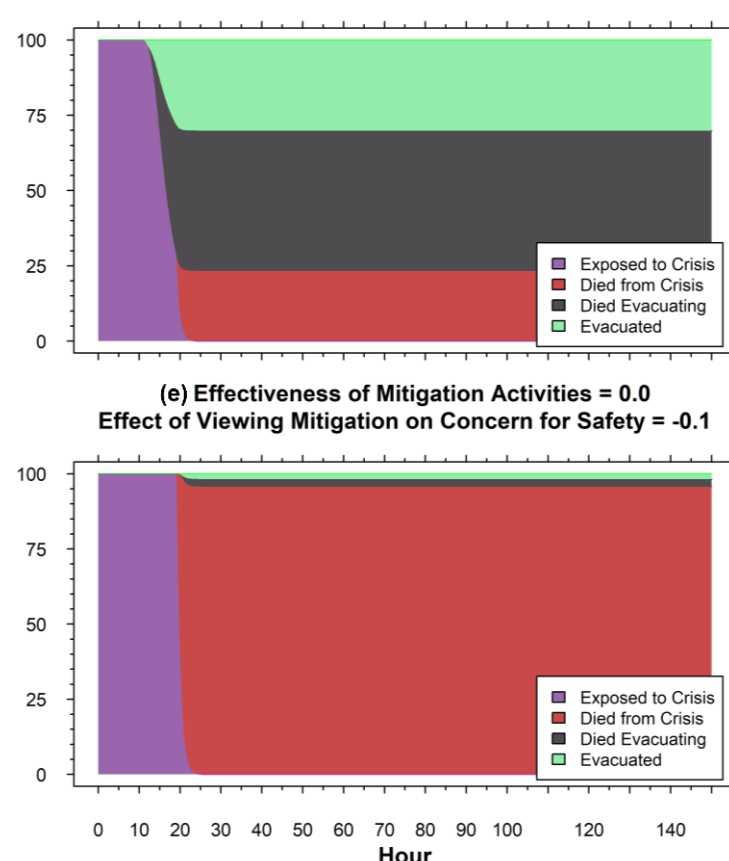


Calming, but still marginally effective, mitigation can increase evacuation efficaciousness

Here, people don't panic and flee, and instead spend effort maintaining system capability

Marginally Effective vs Ineffective Mitigation

(d) Effectiveness of Mitigation Activities = 0.0
Effect of Viewing Mitigation on Concern for Safety = -0.035



Positive effect of calming lost when mitigation is totally ineffective

- For very calming mitigation, can get 'head in the sand' outcome with negligible evacuation

This is 'rearranging the deckchairs' in the original meaning

Model Files &
Additional
Documentation

