



Simulating Human Response

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CEM IR&D

Problem

- Regulations are imposed with the assumption that people will comply
- Some people choose not to comply with regulations
- How can we help decision makers understand which people are unlikely to comply and why

Background

- Policies are implemented by imposing regulations
- Regulations change environments
- People respond to changes in their environment based on
 - Perception of the change
 - Social context

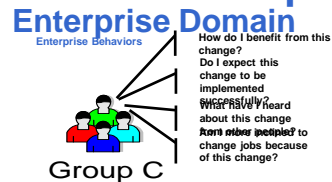


Many people cross US borders in spite of regulations

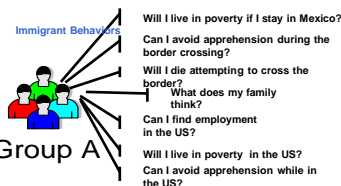
Objective

- Leverage multiple disciplines to examine responses to change
 - Psychology
 - Bayesian belief Networks
 - Gravity models
- Develop a quantitative change response modeling method
- Demonstrate the method in multiple domains

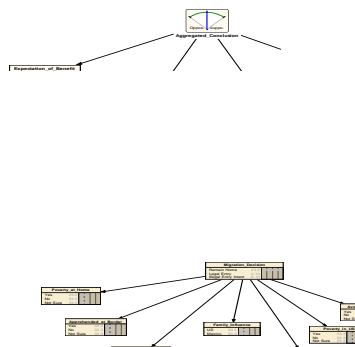
Decompose



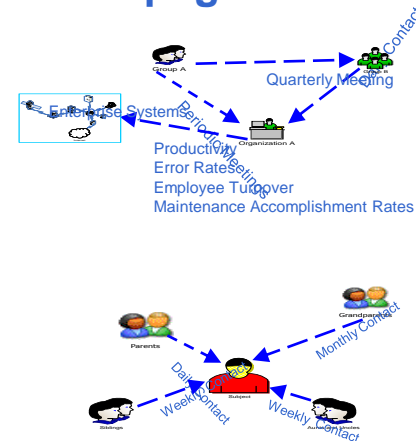
Immigration Domain



Aggregate



Propagate



Activities

- **Develop the method**
 - **Perform calculations**
 - **Integrate techniques**
- **Document the method**
 - **Conference papers**
 - **Journal articles**
 - **System specification**
 - **Develop software**
- **Calibrate the method**
 - **Small field trial**
- **Validate the method**
 - **Large field trial**

Highlight

- **Demonstrating the method in multiple domains**
 - **Workforce reaction to enterprise change initiatives**
 - **Responses by undocumented immigrants to changes in U.S. immigration policy**
 - **Public responses to environmental threats**
 - **Reactions to change in healthcare delivery practices**



Imposing new procedures and systems



Changing immigration policy



Advising the public about environmental hazards

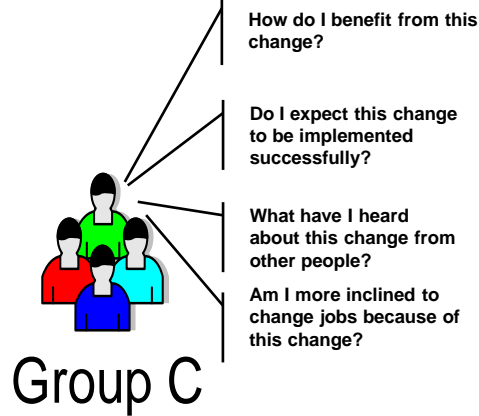


Encouraging clinicians to update healthcare practices

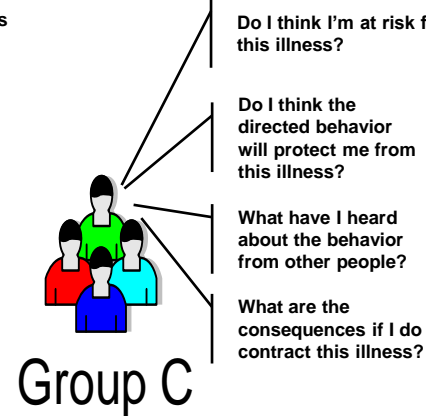
Demonstration

Decompose

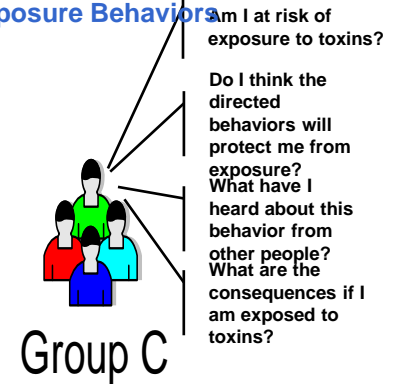
Enterprise Behaviors



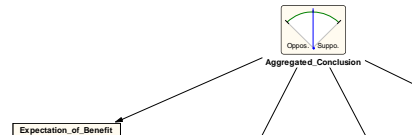
Public Health Behaviors



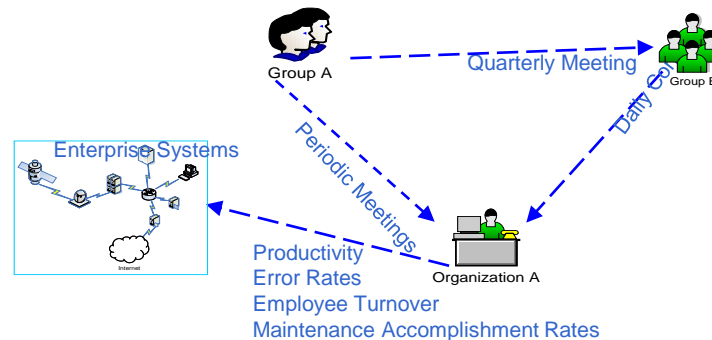
Environmental Exposure Behaviors



Aggregate



Propagate



Impacts

- **Presented papers at four conferences and at three academic workshops**
- **Patent pending**
- **Integrating the method into customer work programs**
 - **Help manage risk during policy changes**
 - **Target communication about new regulations to stakeholders effectively**
 - **Increase likelihood of compliance with regulations by resistant stakeholders**

Future Plans

- **Large field trial**
 - Major policy change
 - Major system deployment
 - Collect data
 - Validate method



Selecting partners to facilitate data collection during a policy change or system deployment