Red Light, Green Light: The Emergent Geography of Crime

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Question

- Why is crime unevenly distributed?

Theories

- Sorting effects
- Peer effects
- State effects
- Ecological effects
- Feedback effects

Model

Objective:
Maximize current wage

Initial Setup: People

- Civilians
  - honesty productivity
  - criminal productivity
- Cops
  - policing productivity

Initial Setup: Places

- Neighborhood
  - Honest wages
  - Criminal wages
- Placement of people
  - Civilians randomly scattered
  - Police placed in a lattice

Order of Play

- Calculate wages
- Choose work
- Choose whether to move

Rules

- Calculate wages (honest, criminal)
  - peer effect * policing effect * individual effect * baseline wage
- Choose work
  - Max (honest wage, criminal wage)

Rules

- Move
  - Pick patch randomly
  - Calculate new neighborhood wages
  - Choose neighborhood with max wage

Rules

- Neighborhood honest wage
  - base wage * (1 + police effect) * (1 - % criminal)
- Neighborhood criminal wage
  - base wage * (1 - police effect) * (1 + % criminal)

Results

- Neighborhoods specialize
- Peer and police effects overwhelm personal character

Results

- Scenarios:
  - Crash of civilization
  - “Green zone”
  - Checkerboard
  - Red light district
  - Utopia

Conclusions

- Model supports interaction of effects