

PRISON ARCHITECTURE AND THE EMERGENCE OF VIOLENCE

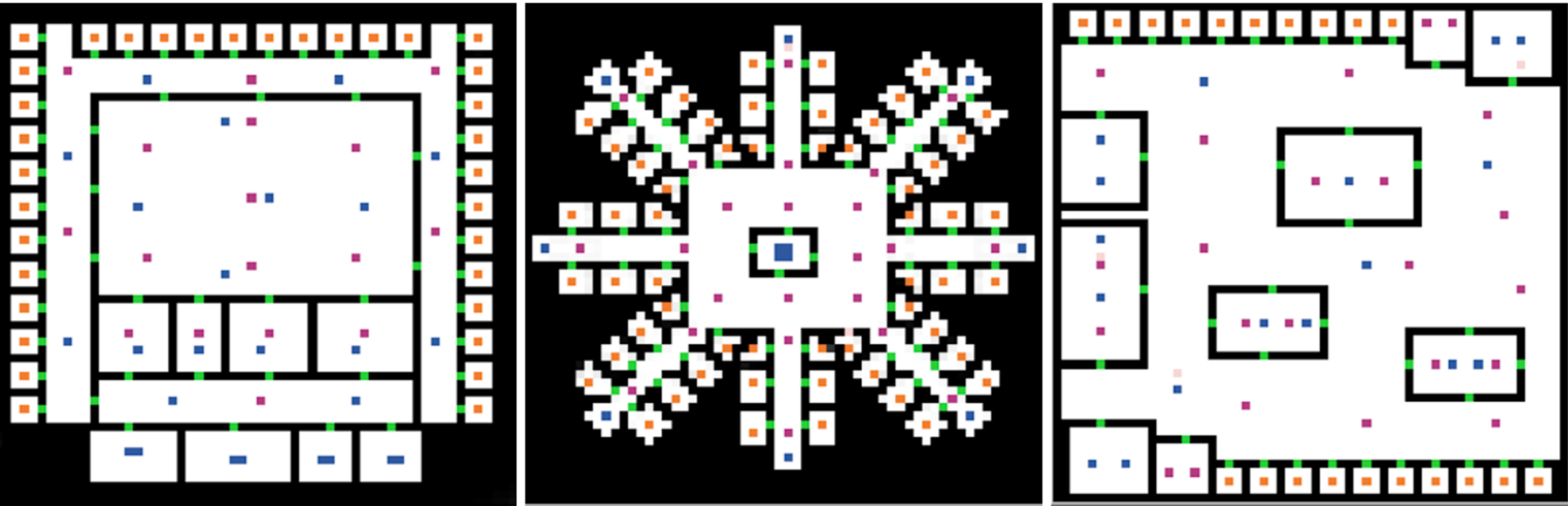
The Role of Architecture in a Prison Social Network's Sensitivity to Budget Cuts

EECS 472 Final Project – Antonio Hazboun

Background and Motivation

Prison Design in the US

- Late 1800s: prison designs to foster community and reduce violence
- Based on theory and philosophy (e.g. Jeremy Bentham's Panopticon) – No empirical testing or evidence
- Modern prisons designed by handful of architects: standard designs that can be easily abstracted



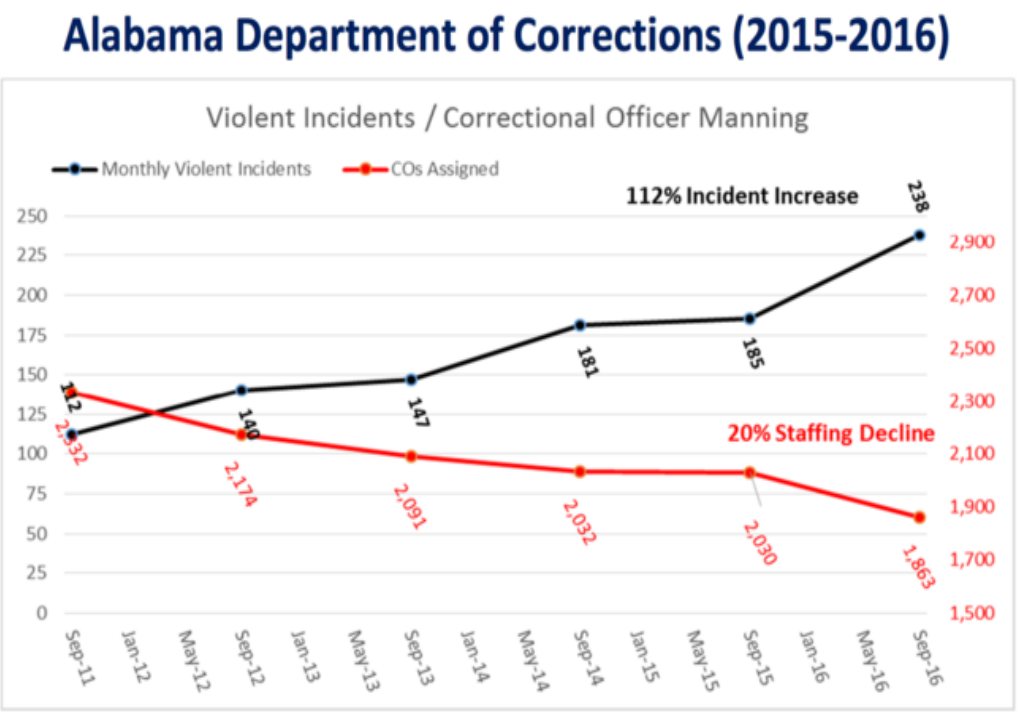
Courtyard

Radial Turtle

Campus

Budget Cuts and the state of Modern Prisons

- Average occupancy at 160% of design capacity
- Staff numbers go down
- Violence doubled in ten years
- Hypothesized reason is competition over resources
- Alabama has average of 20 inmates sharing one toilet



Aim and Metrics

Aim

- Understand the contexts and locations of violent interactions
- Predict sensitivity to budget cuts of different prison designs

Metrics

- Average weighted closeness of inmate relationships by class
- Ratio of Kind to Violent Interactions between prisoners

Agents Playing and Model Rules

Prison Guards

- Wander around between guard spaces
- Go from shift posts to guard lounges
- Do not interact socially with inmates



Inmates

- Wander between their rooms and public spaces
- On their way there, they see who's around and ask
 - ☐ How do I feel about this person?
 - ☐ How do the other people around me feel about this person?
 - ☐ Can a guard see and punish me if I decide to be violent?
- Update relationship with others based on interaction



Different Classes of Inmates

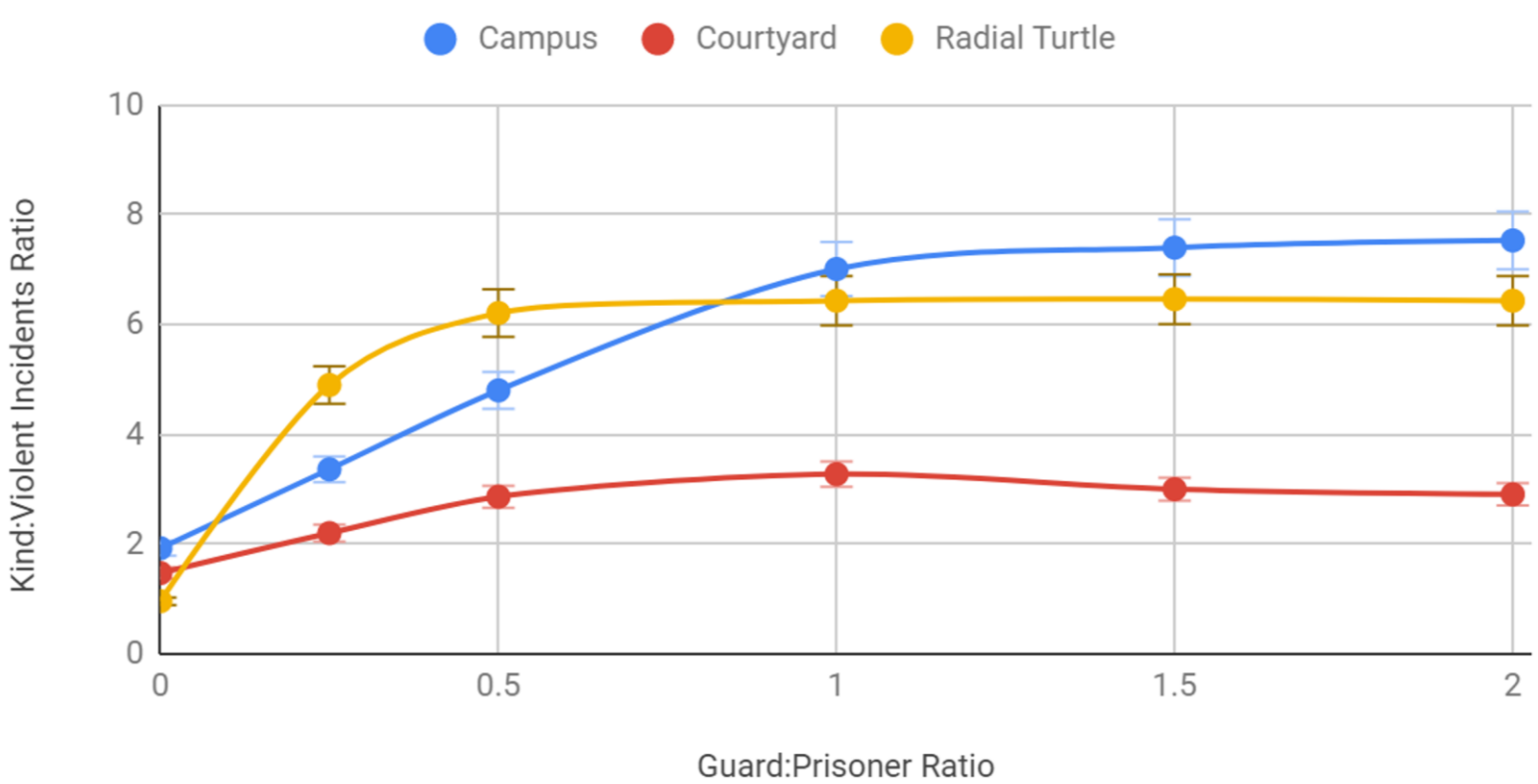
- Classes represent four quadrants of two axis scale:
 - ☐ Collectively vs Individually oriented
 - ☐ Willing vs Unwilling to integrate into prison community
- Classes have different base propensities for violence and kindness in interactions
- Classes are affected differently by presence of guards
- Classes consider others' opinions to different extents

SQUARE JOHN Collectively Oriented Refuses to Accept Prison Community	WOULD NEVER STAB ANYONE	
RIGHT GUY Collectively Oriented Very Accepting of Prison Community	WOULD STAB SOMEONE IN RETALIATION	
CON POLITICIAN Individually Oriented Very Accepting of Prison Community	YELLS "I WON'T HESITATE" FIRST	
OUTLAW Individually Oriented Refuses to Accept Prison Community	WOULD STAB AS A WARNING	

Findings and Conclusions

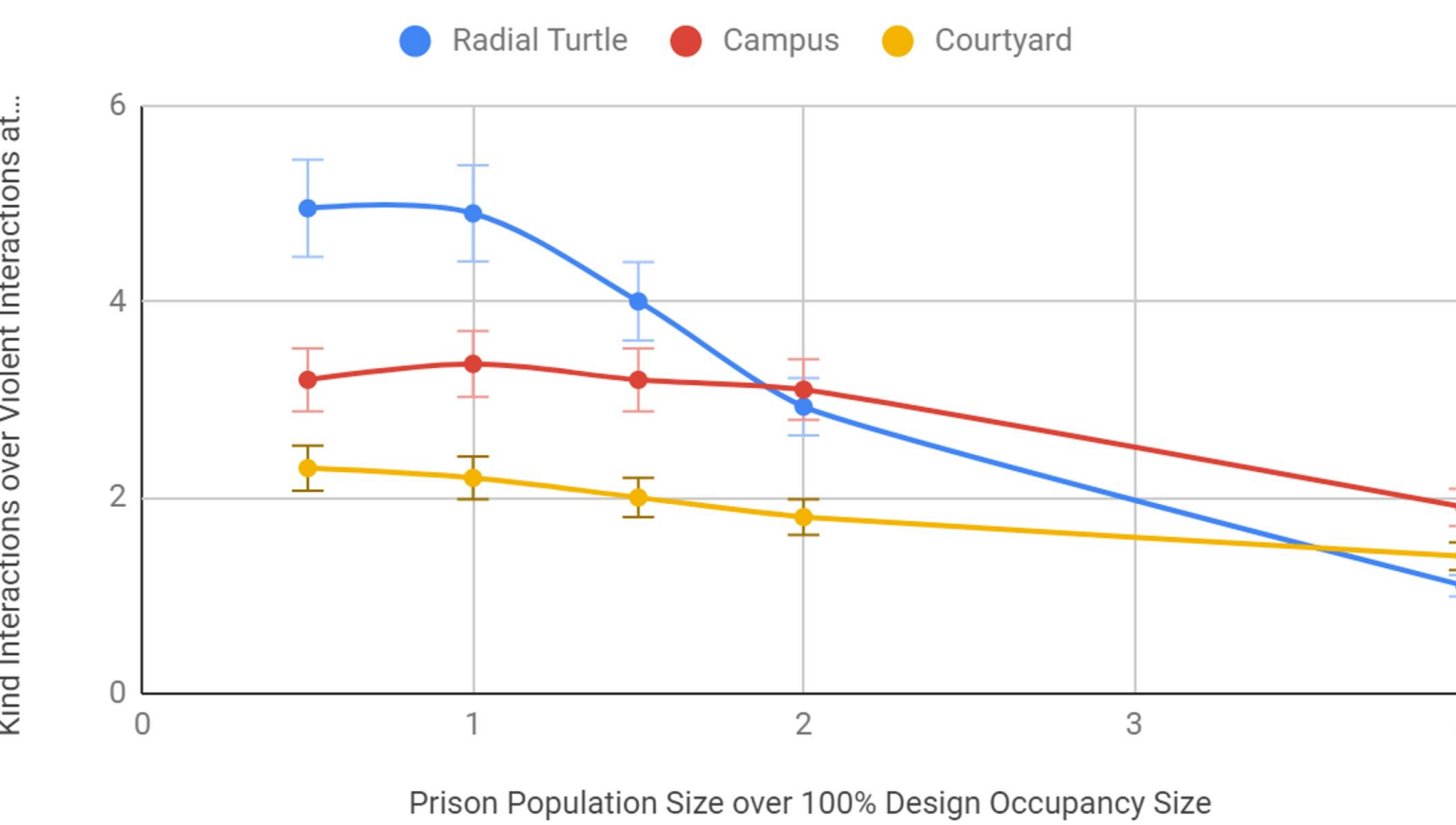
Campus layouts only discourage violence best at large guard fractions – At realistic fractions, radial layout is best

Effect of Guard:Inmate Ratio on Kindness:Violence Ratio in Different Prison Layouts



At conventional crowding levels, Radial designs best.
At high crowding, violence levels same as with 0 guards

Effect of Crowding on Ratio of Kind to Violent Interactions



Places of greatest violence are at corners and walls near doors - at hidden landmarks that are regularly visited by many inmates.

