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# Risky actions & Risky places.

Dr. Beth Hardie.

11<sup>th</sup> Feb 2021.

SafePlaces Network  
Seminar Series.

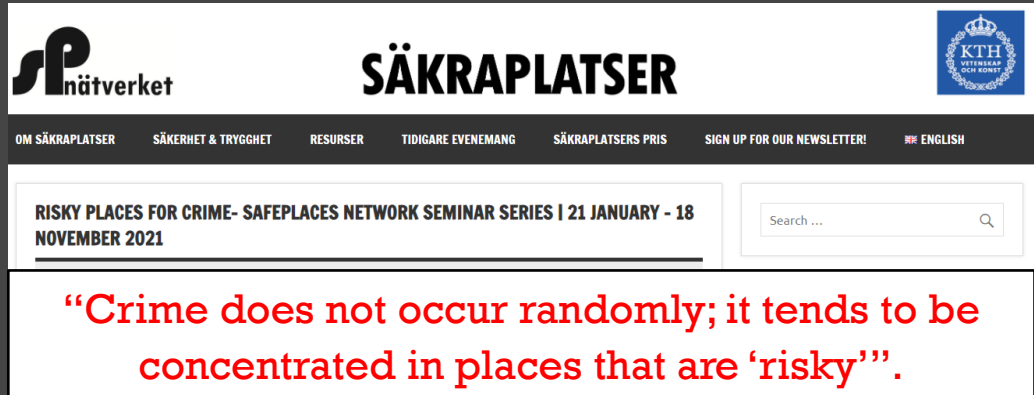
## Key Questions:

- What is missing from many theories and studies of risky places?
- What kind of data is required to study person-environment interaction in crime causation?
- What kinds of methods can collect such data?
- What distinguishes the findings facilitated by such methods from those generated by more traditional methods of studying risky places?

# Seminar outline:

- Introduction:
  - Person-Environment Interaction in Acts of Crime
  - Situational Action Theory (SAT)
- Measurement:
  - Peterborough Adolescent & Young Adult Development Study (PADS+)
  - Space-Time Budget (STB)
  - Example Data
- Explaining Risky Places: Person-Environment Interaction
  - Environment Level
  - Situational Level

Risky Places.  
Risky Acts.  
Risky People.



- Risky places are **CONCENTRATIONS** of crimes.
- A crime is an **ACT**.
- An act is committed by a **PERSON**.
- An act is committed by a **PERSON** in an **ENVIRONMENT**.

**PEOPLE** and **ENVIRONMENTS** are both crucial to  
explaining **AGGREGATIONS** of **ACTS** of crime

(in people or places)

## Study of Risky Places: Missing People & Action.

### RESEARCH DOESN'T OFTEN INTEGRATE.

- Fragmentation of psychological and sociological orientations in criminology.
  - Studies and theories of crime concentration in people (criminality) rarely integrate environmental factors.
  - Studies and theories of crime concentration at places rarely integrate individual factors.

## Study of Risky Places: Missing People & Action.

### ATTEMPTS AT INTEGRATION ARE MOST COMMONLY ADDITIVE.

- Sometimes level of study does not change such that
  - Environments added as a feature of people
  - People added as a feature of environments
- Study **WHICH** factors have influence & relatively, **HOW MUCH**.
- **ADDITIVE** integration of people & environments.
- **ADD** factors up to **PREDICT** crime distribution across people or places.

PREDICTING AN  
AGGREGATE

## Study of Risky Places: Missing People & Action.

### NEED AN INTEGRATIVE MODEL OF ACTION.

- Which specific **FEATURES & CHARACTERISTICS** of people are relevant?
- What **INTERACTIVE PROCESSES** are involved?
- **HOW & WHY** does this result in crime?
  - (ACTS of crime can then be AGGREGATED to people or places)

EXPLAINING  
ACTS

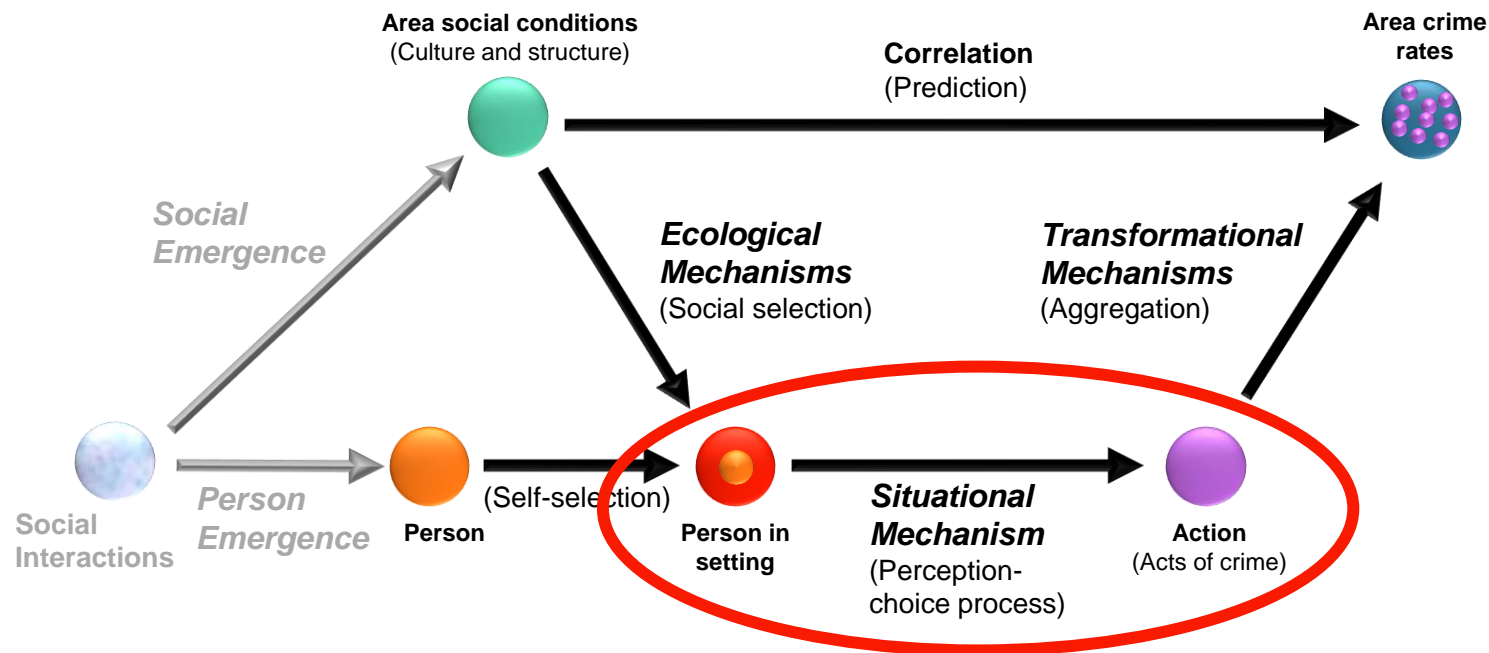
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# Situational Action Theory.

Application: Explaining Risky Places.



# The Social and Situational models of SAT.



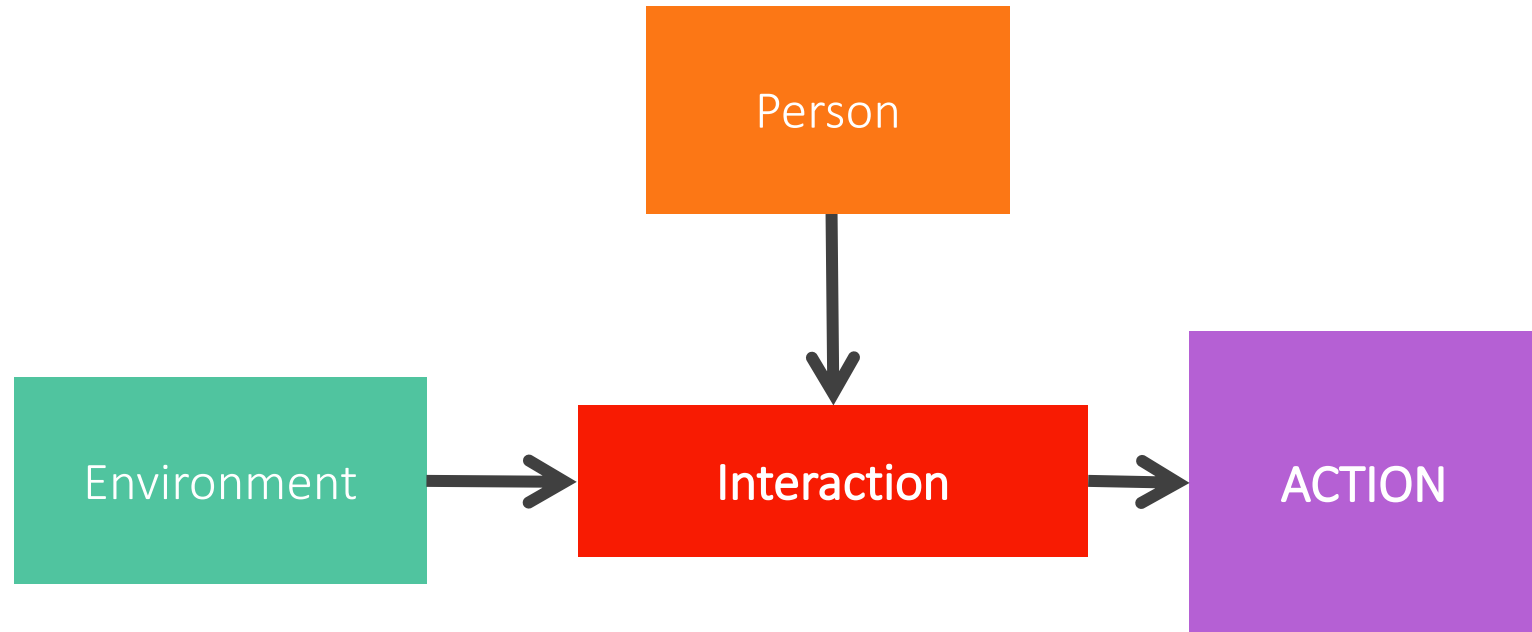
Risky places are concentrations of acts.

Acts of crime  
result from  
Person-Environment  
INTERACTION

$$P \times E = A$$

Situational Model of  
SAT.

PEA HYPOTHESIS.



# Situational Interaction & SAT.

An expanded terminology for  
understanding risky places.

## PERSON

- An entity with a biological & physiological make-up, experiences & agency.

## ACTION

- Bodily movement (or sequence thereof) performed under the person's guidance.

## SETTING

- The part of the environment that, at any given moment in time, is accessible to a person through his or her senses.

## ENVIRONMENT

- All that lies outside the person.
  - Social environment includes social relations & events.
  - Physical environment includes non-human objects & their relations.

## SITUATION

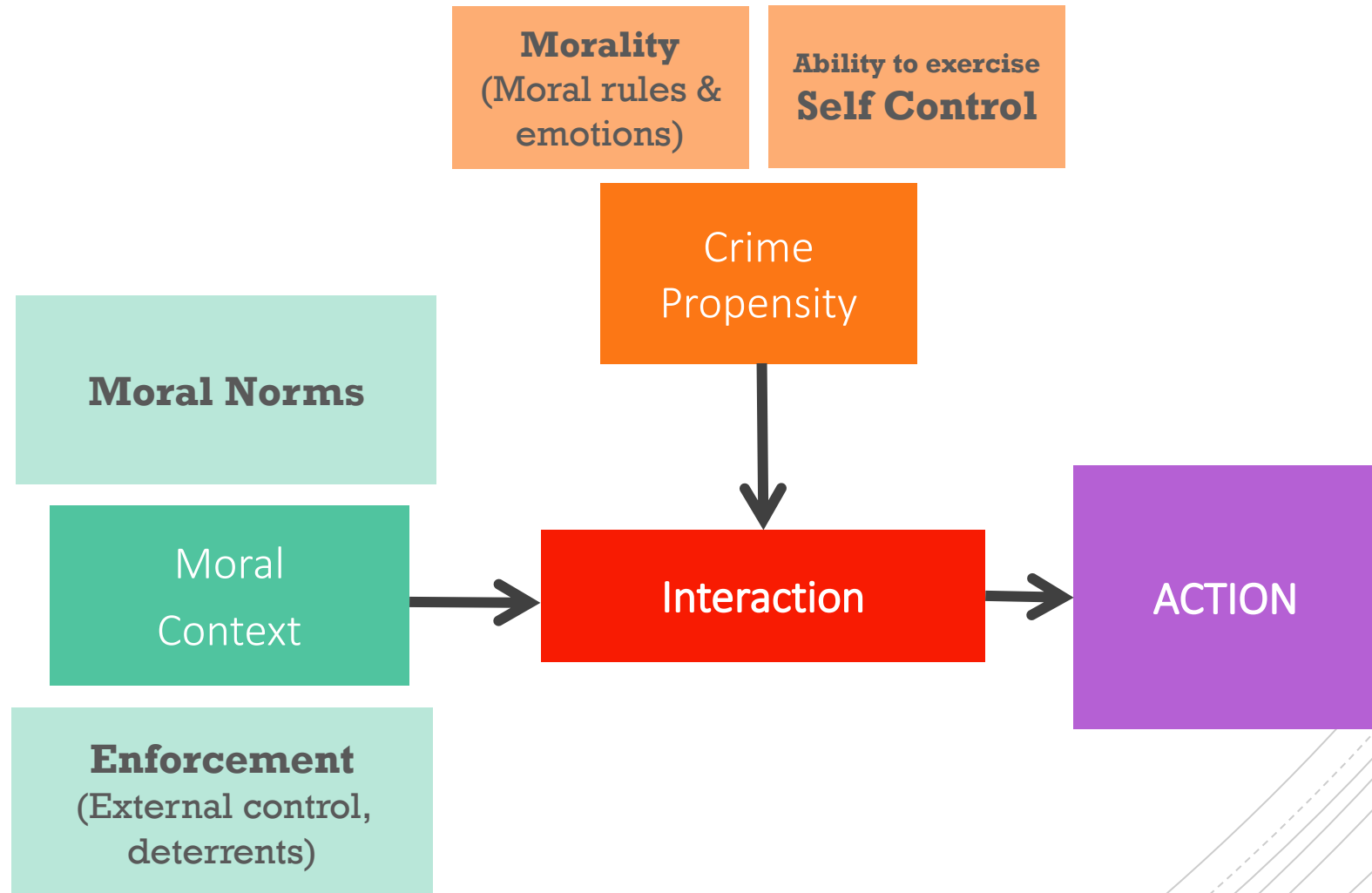
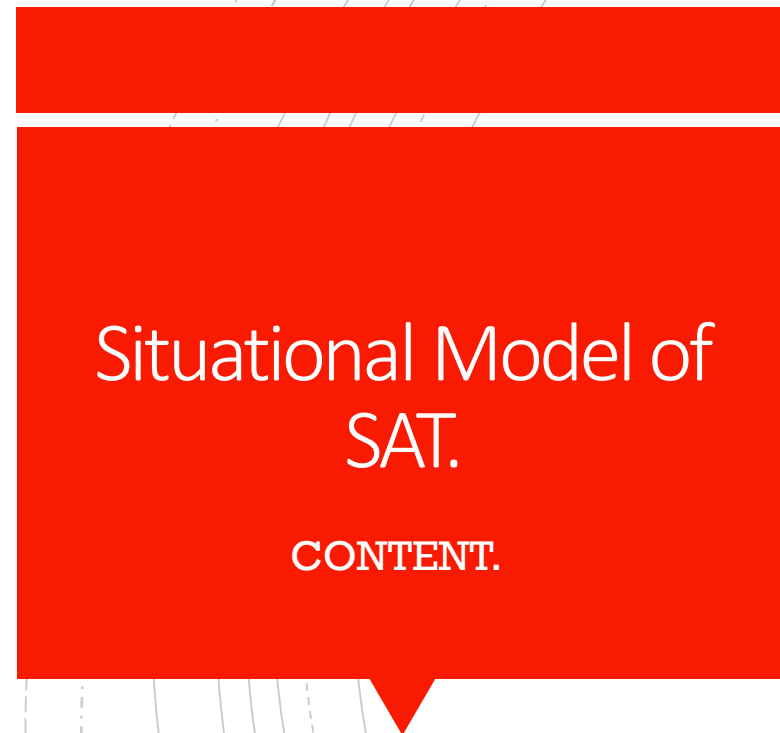
- Engagement of a person (with particular characteristics) & a setting (with particular characteristics) through the perception of alternatives and process of choice.

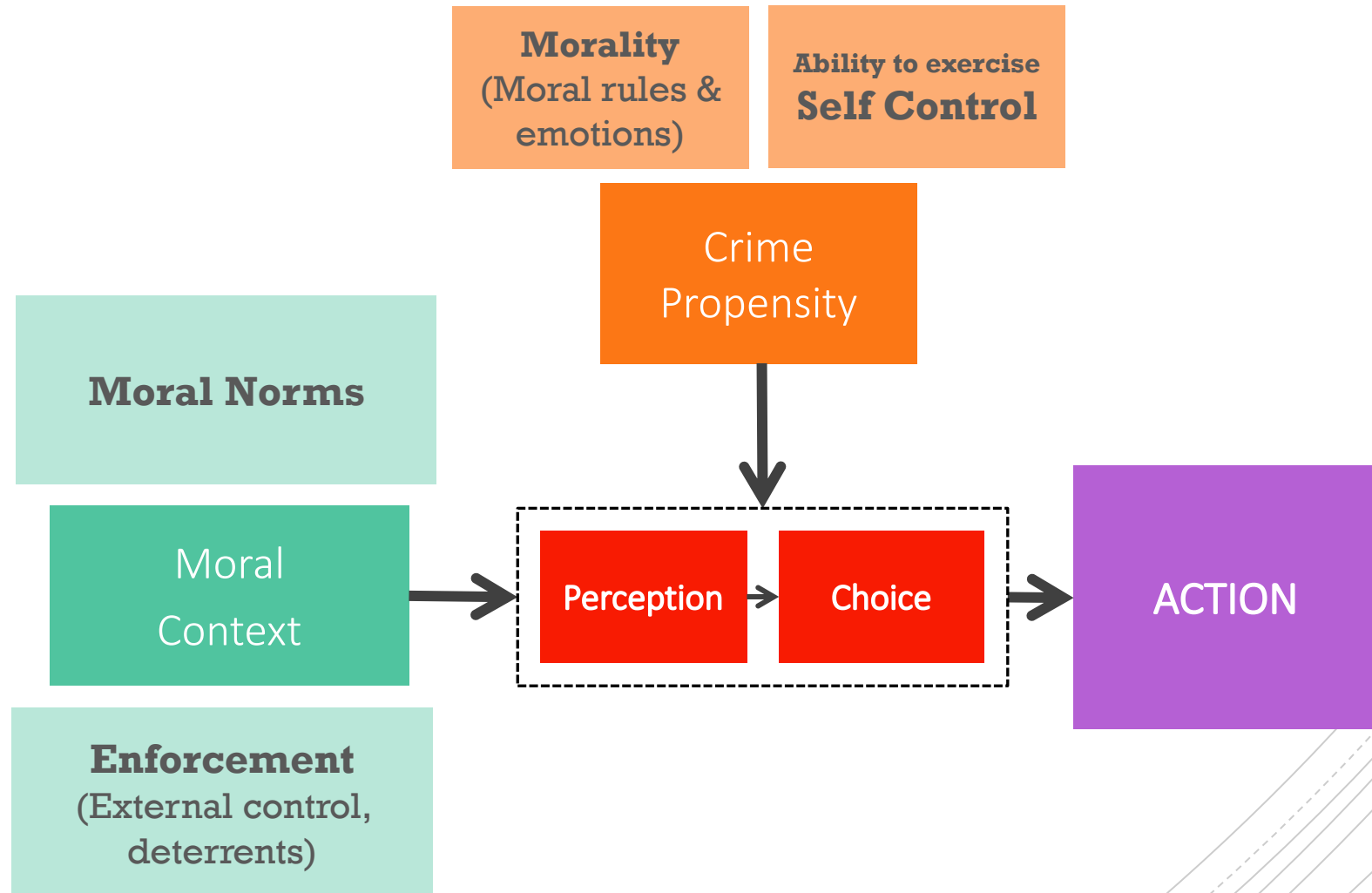
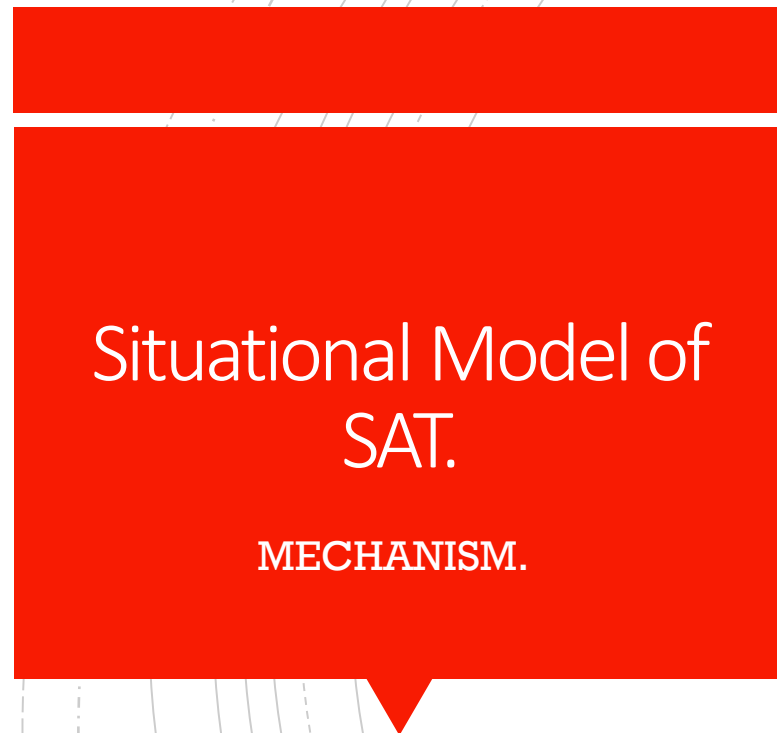
## SITUATIONAL INTERACTION

- The kind of interaction that is inherent in situations.

## EXPOSURE

- **Convergence** (in a particular time & space) of a person (with particular characteristics) & a setting (with particular characteristics).
  - Ind'l-level.
  - Env'l-level.
  - Sit'l-level.





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# Measurement.

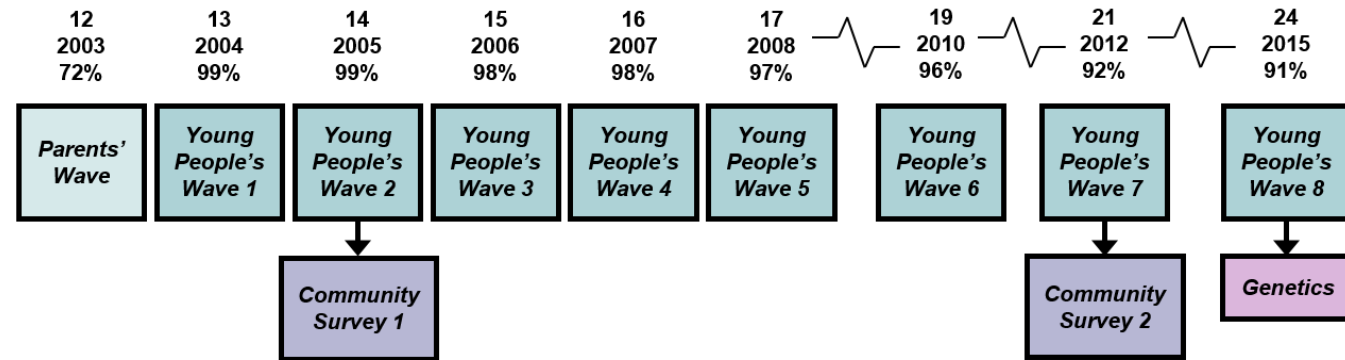
PADS+ Space-Time Budget+.

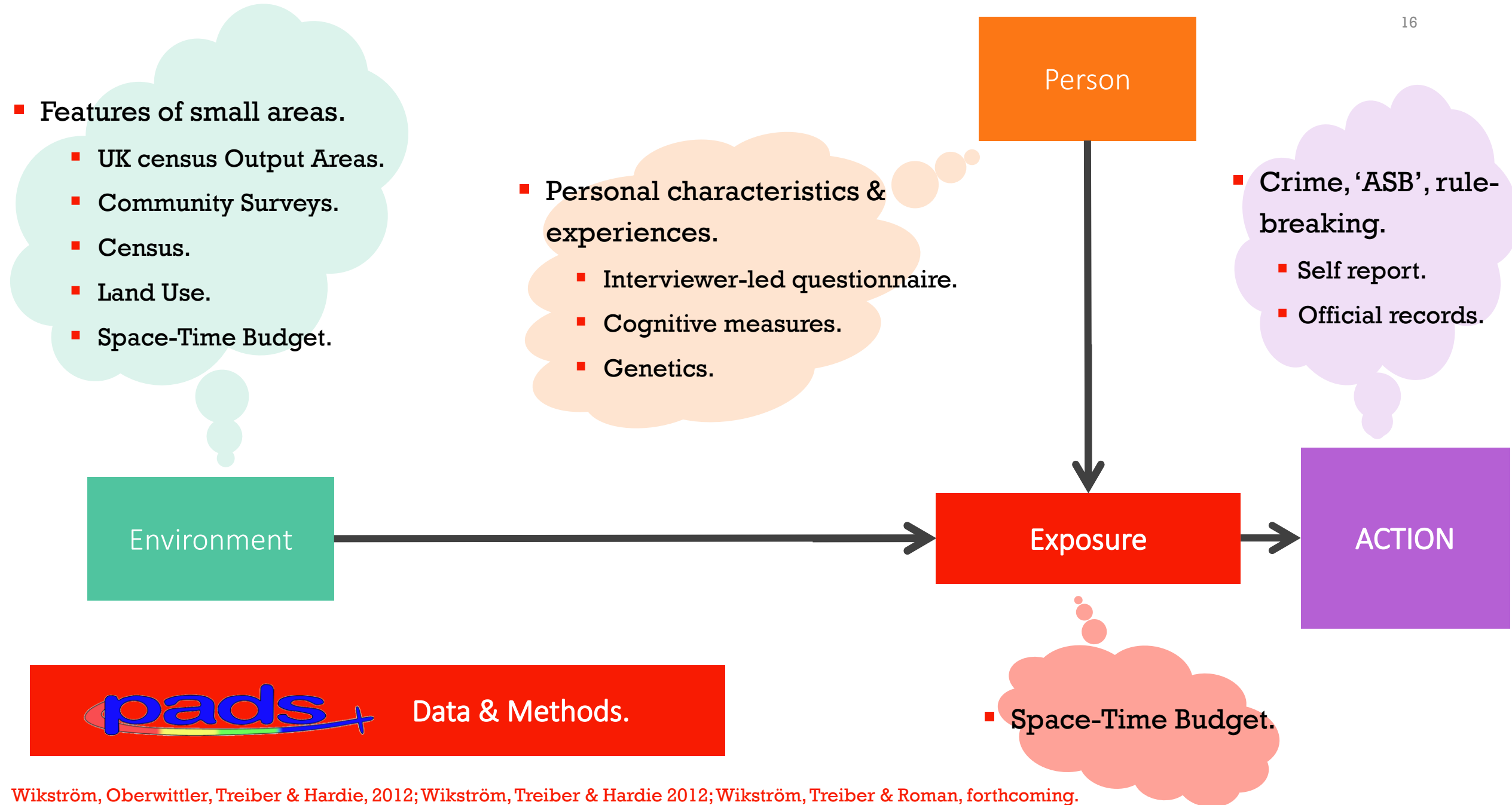


# Peterborough Adolescent & Young Adult Development Study.

Reference age  
Year  
Response/retention

Data  
Collection  
Wave







## STB Interview.



- High-quality intensive 1-to-1 interview.
- Highly specified spatially located time diary.
- 4 days in past 7.
  - Two most recent weekdays.
  - Friday & Saturday.
- 24 hours.
  - 6am-5am.
  - Not during holidays.

Time & Day.

Geospatial Location.

Functional Place.

Activity.

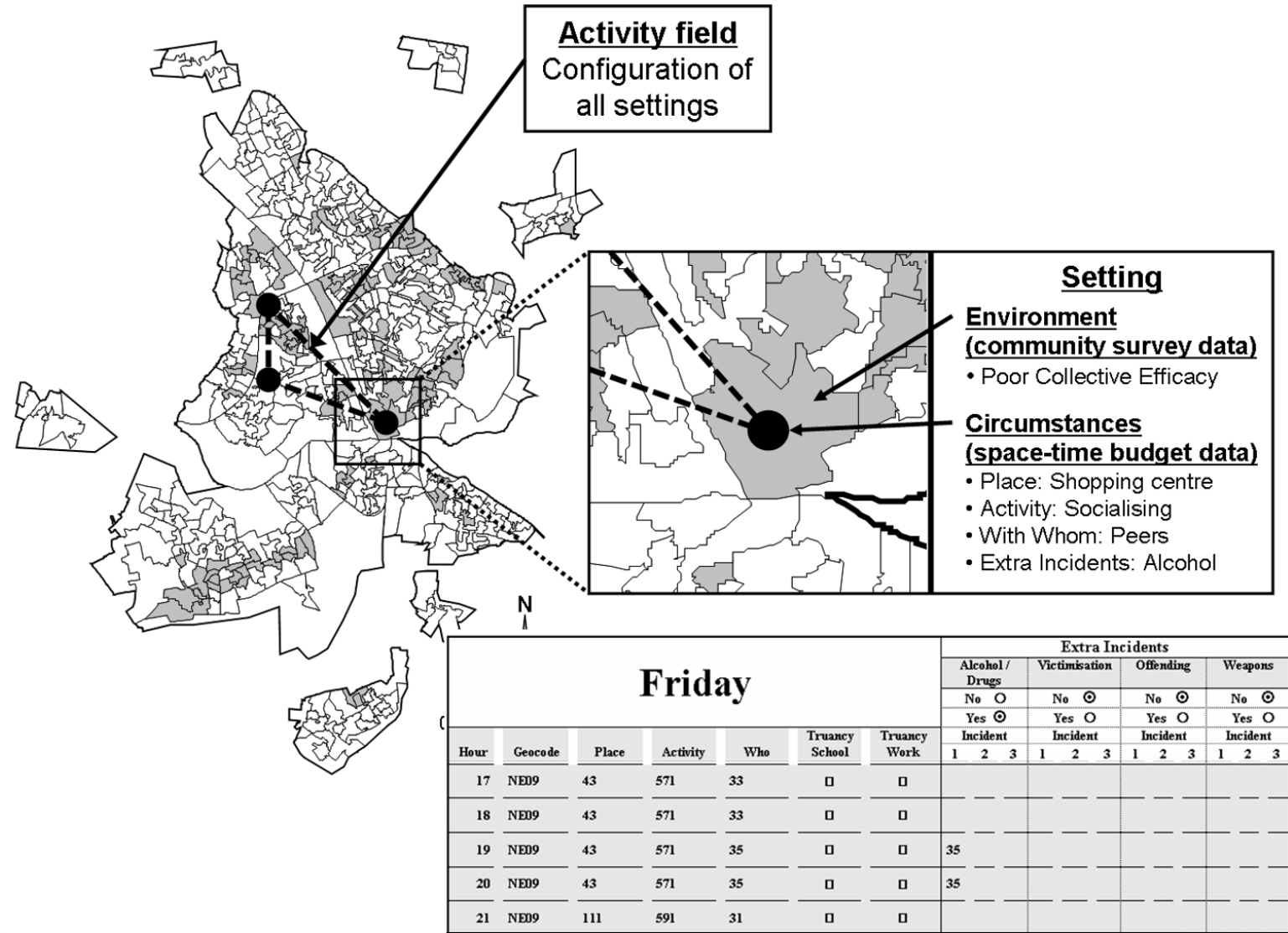
With Whom.

Extra Incidents.

## Friday

Friday							Extra Incidents											
							Alcohol / Drugs			Victimisation			Offending			Weapons		
							No ☐			No ☑			No ☑			No ☑		
							Yes ☑			Yes ☐			Yes ☐			Yes ☐		
Hour	Geocode	Place	Activity	Who	Truancy School	Truancy Work	Incident			Incident			Incident			Incident		
							1	2	3	1	2	3	1	2	3	1	2	3
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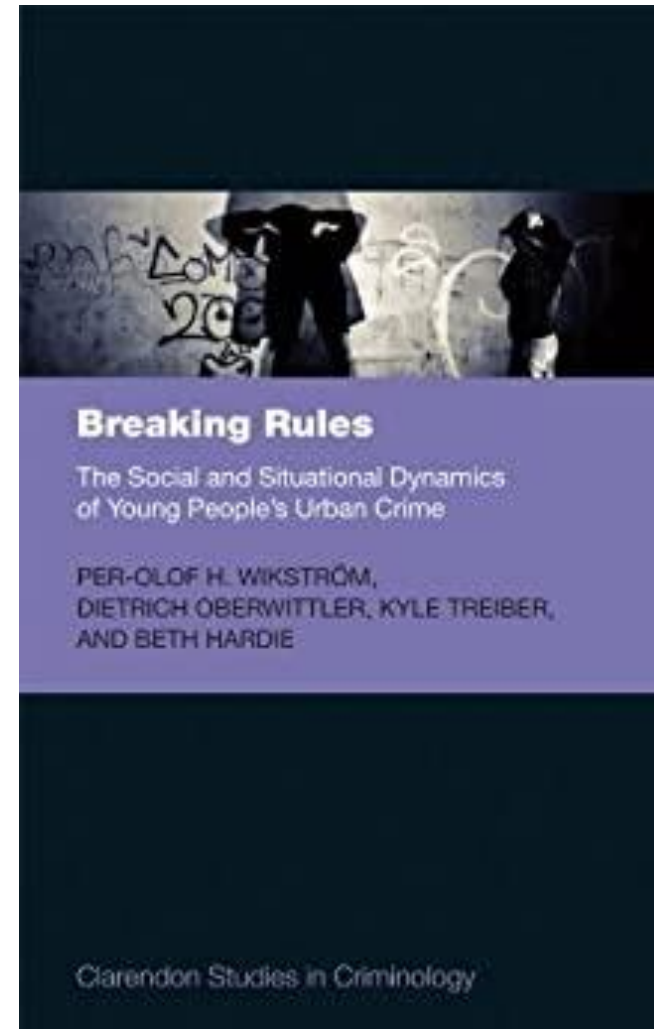
# Capturing Activity fields.



## Space-Time Budget.

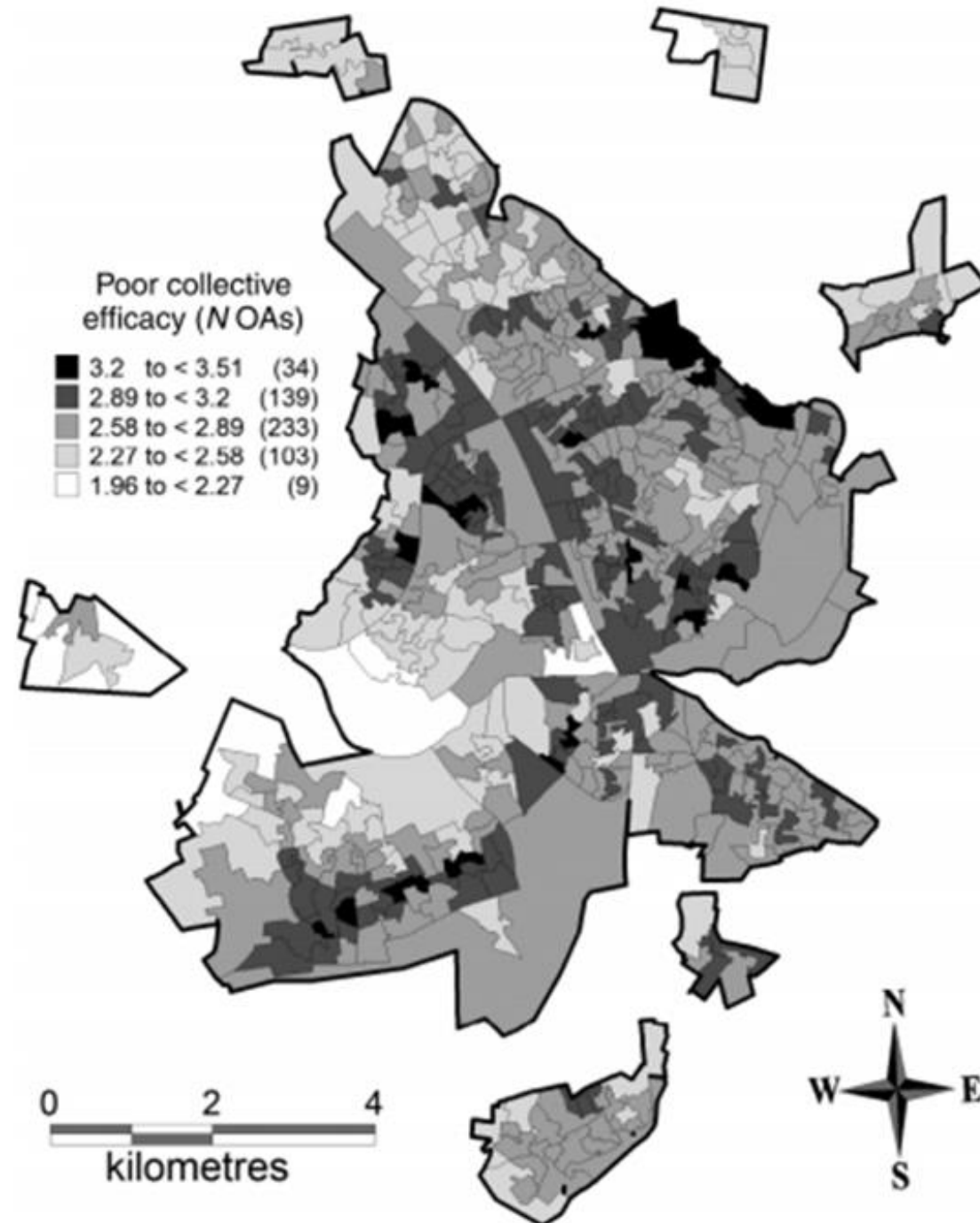
- Captures **EXPOSURE** of individuals to settings.
  - And the **FEATURES** of that **CONVERGENCE**.
- Multiple data sources: **SPATIALLY & TEMPORALLY LINKED**.
- Rich **DETAIL** about settings.
- **COMPLEX CONSTRUCTIONS**.
  - E.G. Unstructured, peer-oriented time (unsupervised, not work or school oriented), outside domestic settings, in areas of poor collective efficacy or city/local centres, spent by people with high crime propensity (weak moral rules and poor ability to exercise self control).
- **SITUATIONAL** level measure of **EXPOSURE**.
  - Can be **AGGREGATED** to **INDIVIDUAL** or **ENVIRONMENT** level.

# Example PADS+ STB+ Data.



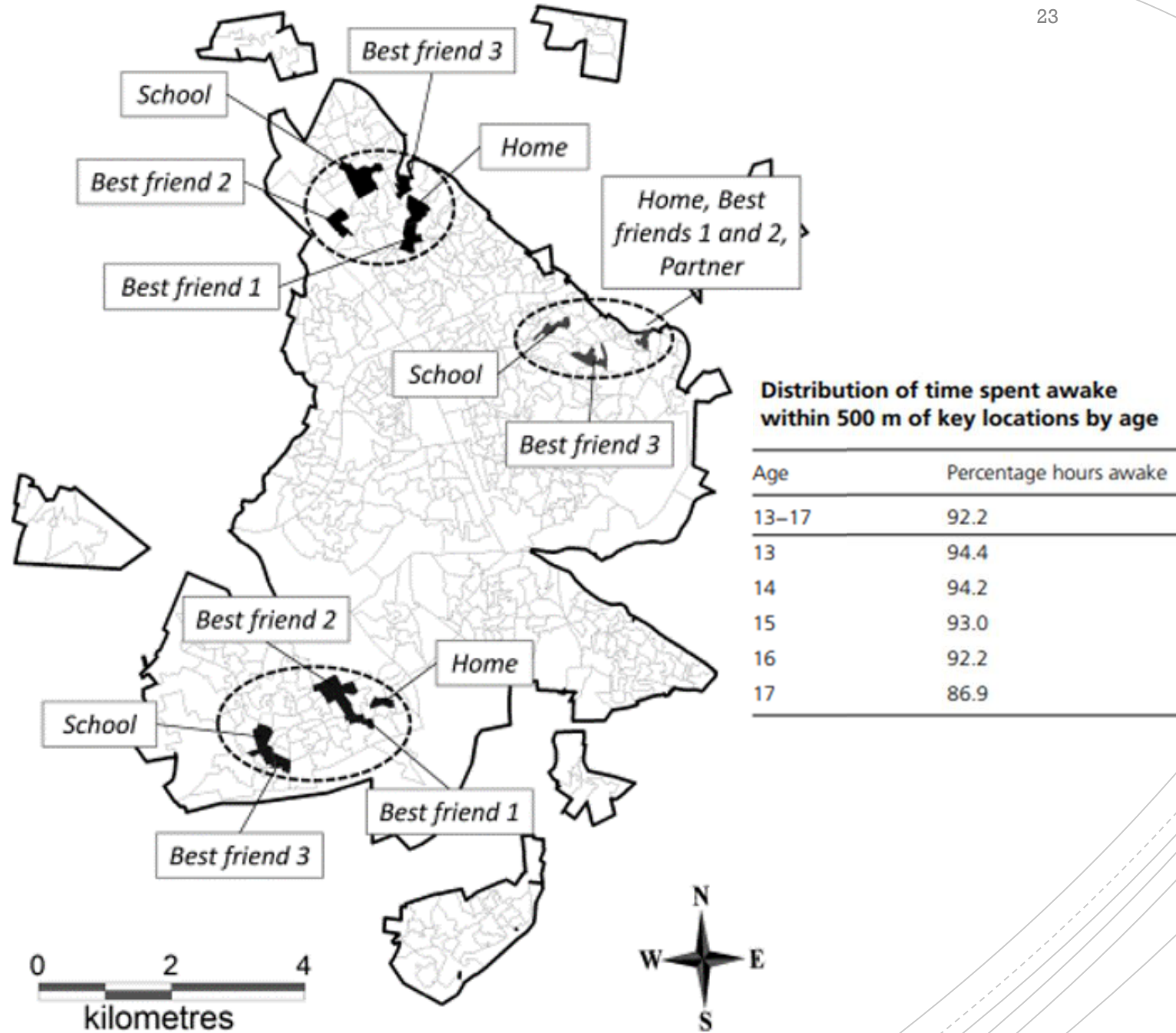
# Social Environments Vary.

Small Area Community Survey.

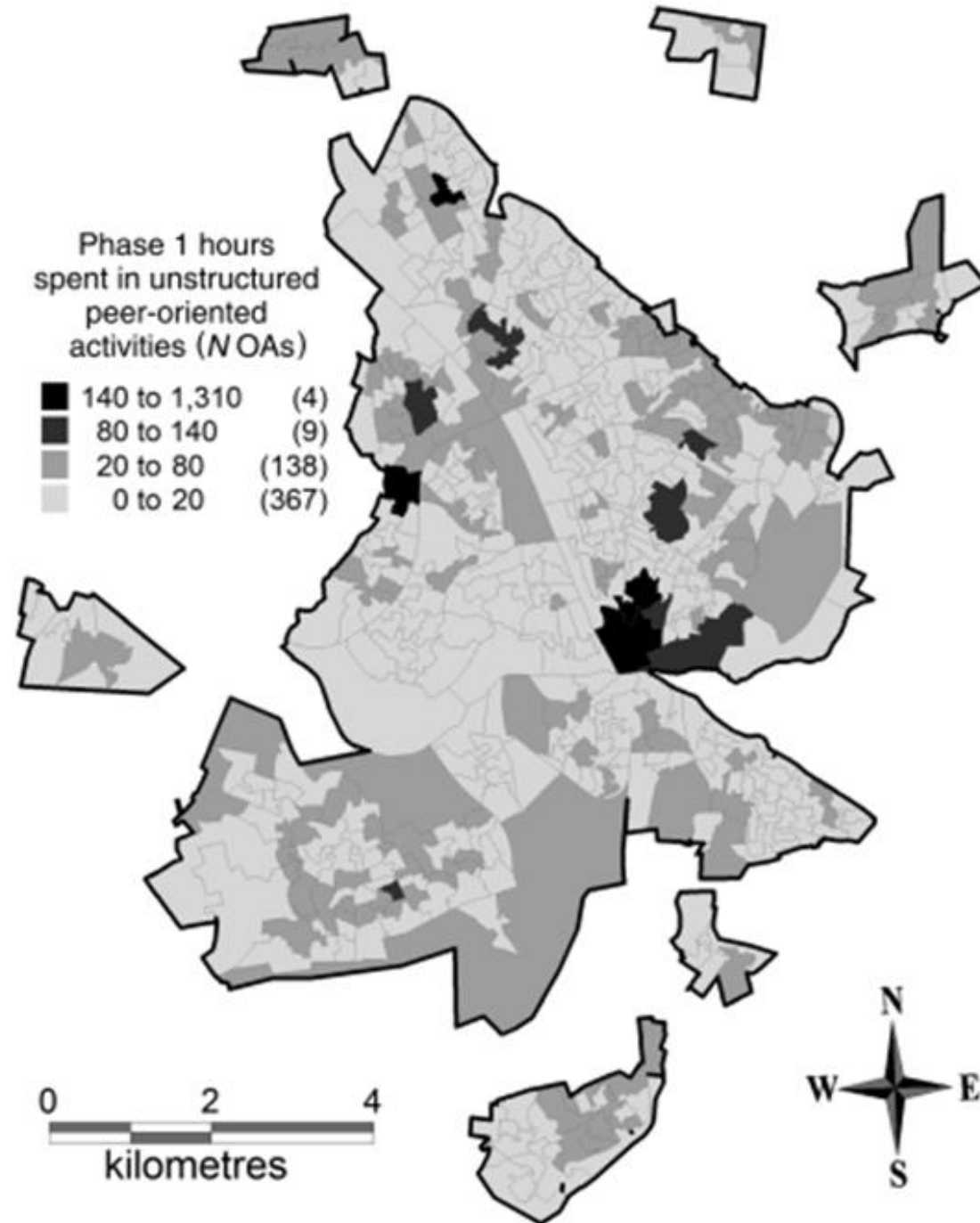




# Individual-Level Spatial Concentration of Time Use.



# Environment- Level Spatial Distribution of Risky Time Use.

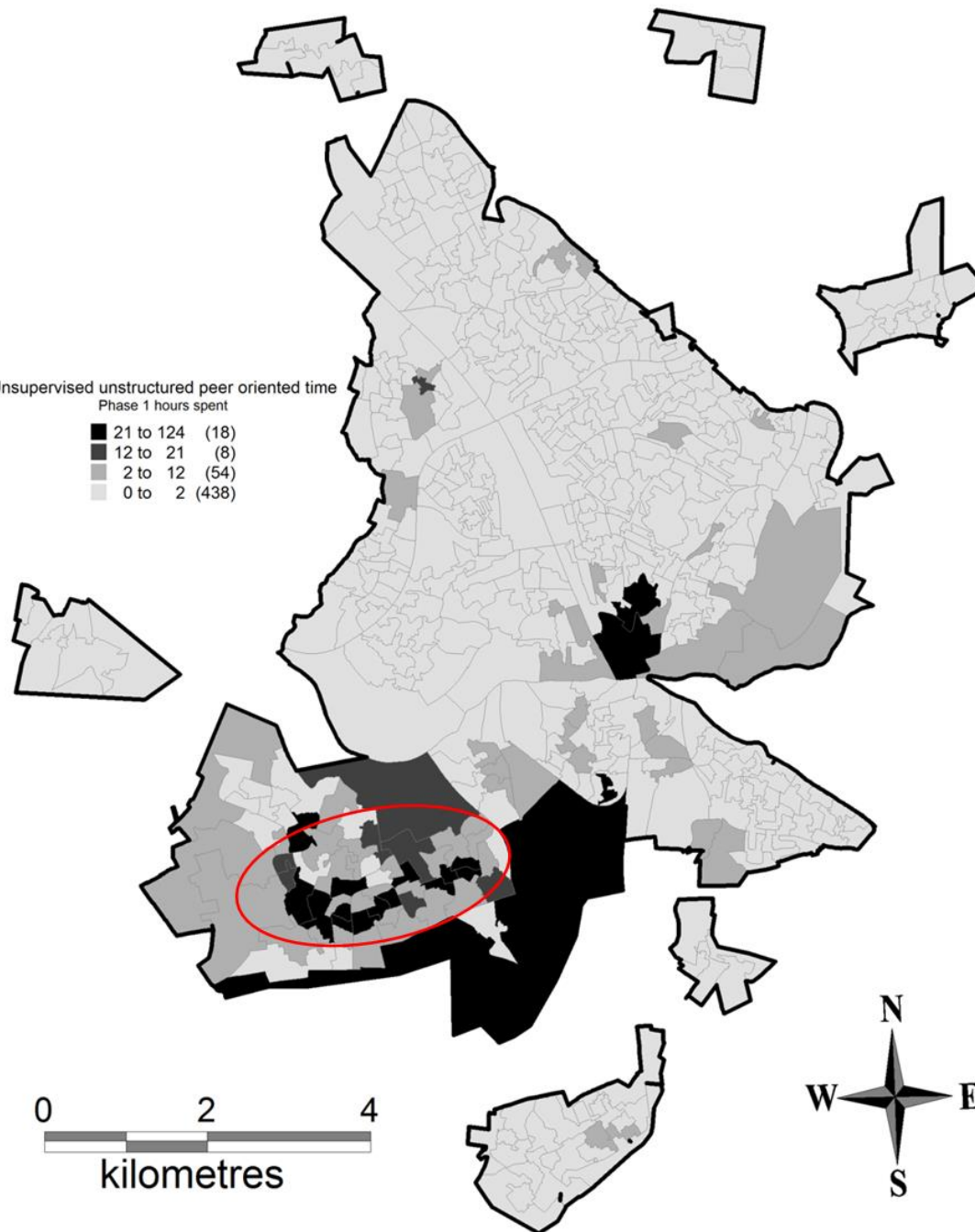




# Intersecting Risky Time Use & Activity Fields.

Unsupervised unstructured peer oriented time  
Phase 1 hours spent

21 to 124	(18)
12 to 21	(8)
2 to 12	(54)
0 to 2	(438)



# Risky time use clusters in time and place.

(Unsupervised unstructured peer oriented time: % by setting and time/day).

	Key settings								
	Private indoor		Public indoor				Public outdoor		
Day/time	Home	Others ' home	School	Work Place	Shop locale	Pub/ Nightclub	Street	Park	Moving
Weekday day	1.4	2.8	0	0	2.3	0.1	1.7	1.0	0.8
Weekday evening	1.6	5.6	0	0	2.8	1.0	6.0	4.2	1.8
Weekend day	0.5	2.3	0	0	5.5	0.1	2.2	1.9	0.3
Weekend evening	3.9	14.7	0	0	4.6	4.7	10.1	8.5	2.3

# Person-Environment Interaction.

Aggregated Environment Level.

# Studying Risky Places.

Aggregated Environment Level.

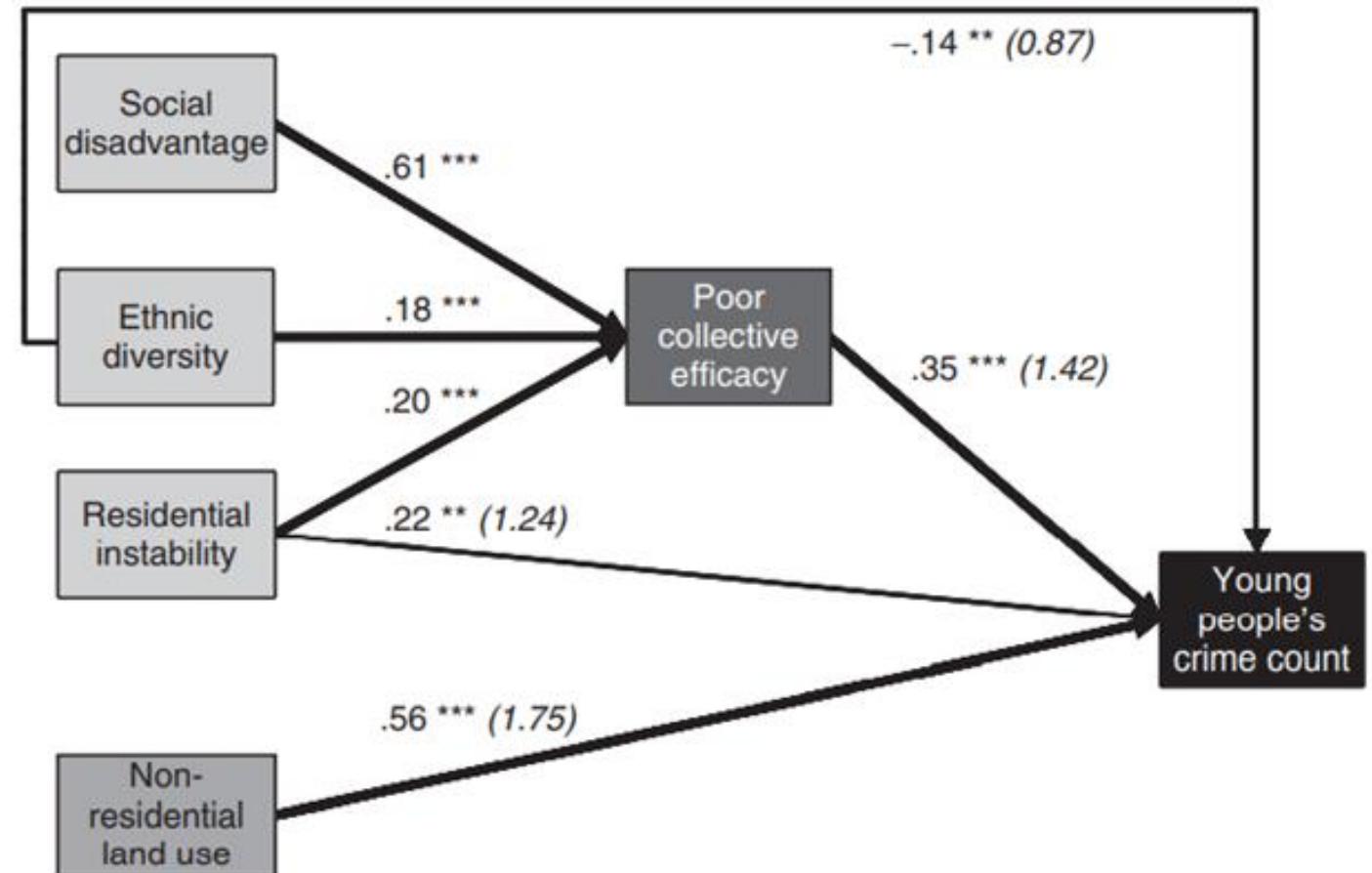
## Step I: Environment effects (Output area level)

Odds ratios in brackets; paths to poor collective efficacy in metric scale; paths to crime in logarithmic scale.

Significance level: \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

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Structural features (census),  
Land use,  
Collective efficacy (com. surv.)  
Police recorded youth crime.



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# Studying Risky Places: Person-Environment Interaction.

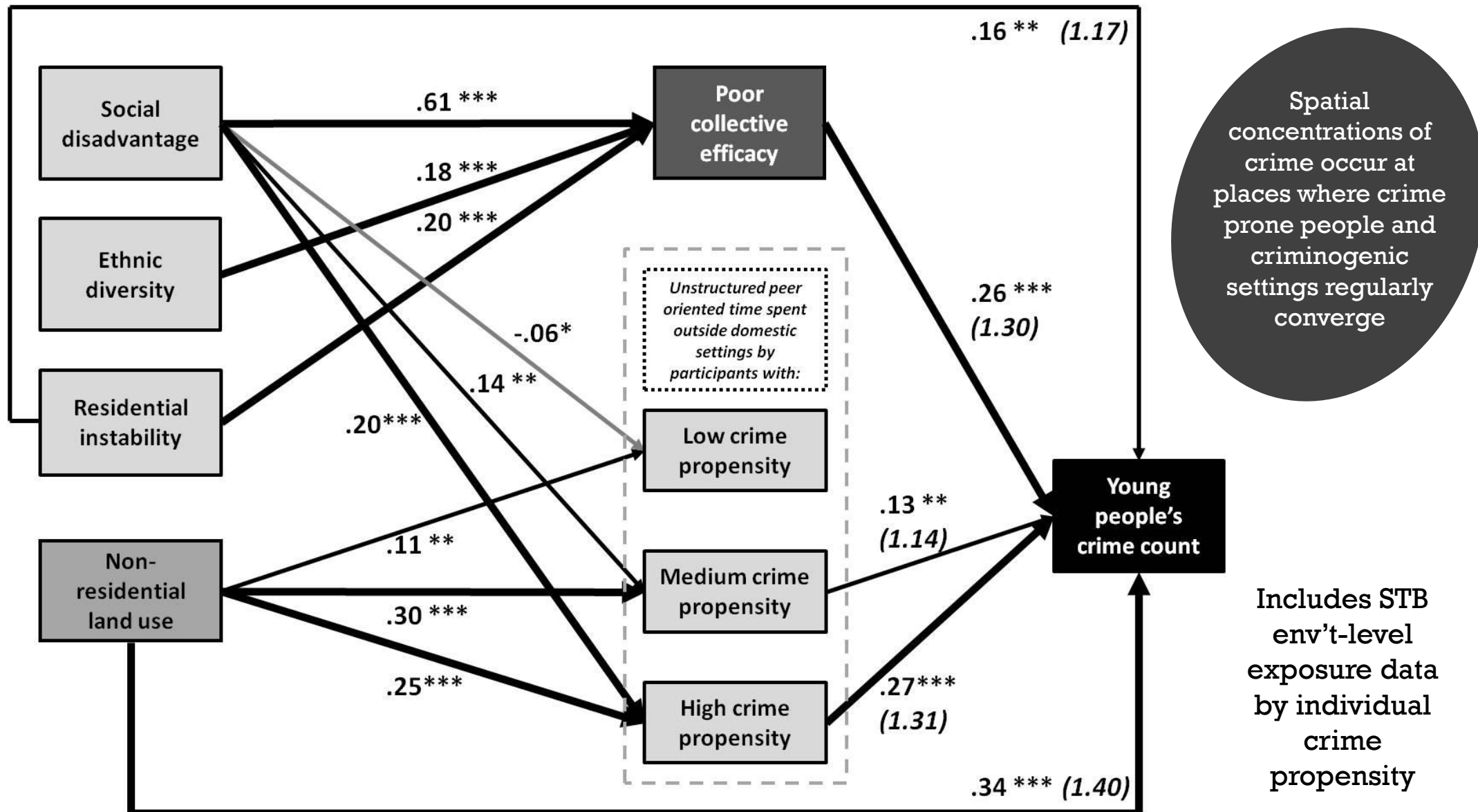
Aggregated Environment Level.

## Step II: Person-Environment Interaction (Output area level)

Odds ratios in brackets; paths to poor collective efficacy in metric scale; paths to crime in logarithmic scale.

Significance level: \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

31



**Table 6.31 Comparison of odds ratios<sup>a</sup> for models predicting area counts of young people's crime including and excluding time use variables by propensity groups**

	Non-residential land use			Poor collective efficacy		
	Model excluding time use variables by propensity groups <sup>b</sup>	Model including time use variables by propensity groups <sup>c</sup>	Percentage reduction in odds ratio	Model excluding time use variables by propensity groups <sup>b</sup>	Model including time use variables by propensity groups <sup>c</sup>	Percentage reduction in odds ratio
All crime	1.75***	1.40***	20.0	1.42***	1.30***	8.5
Violence	1.82***	1.44***	20.9	1.39***	1.32***	5.0
Vandalism	1.70***	1.52***	10.6	1.27*	<i>n.s.</i>	
Serious property	1.21**	1.18*	2.5	1.17*	1.17*	0.0
Shoplifting	7.24***	2.63**	63.7	<i>n.s.</i>	<i>n.s.</i>	

<sup>a</sup> Significance levels: \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .



## Person-Environment Interaction.

Environment Level of Analysis.

- Independent, aggregated data.
- Dependency effect
- Assumption of co-occurrence or convergence.
  - an example of an **ECOLOGICAL FALLACY**.

Interactions revealed in data captured at or aggregated to the environment level:

“do not demonstrate that a particular person (with a particular crime propensity) *is actually in* a particular setting (with particular criminogenic features) when he or she commits an act of crime”

Wikström et al. (2012, p. 407)

## Person-Environment Interaction.

Appropriate Level of Analysis.

- Level of **measurement & analysis** must match level of **study & conclusions** (ACTION).
- Actions result from **SITUATIONS**.
- **Individual** and **environmental** component parts cannot be decomposed.
- Person **IN** environment; not person **AND** environment.

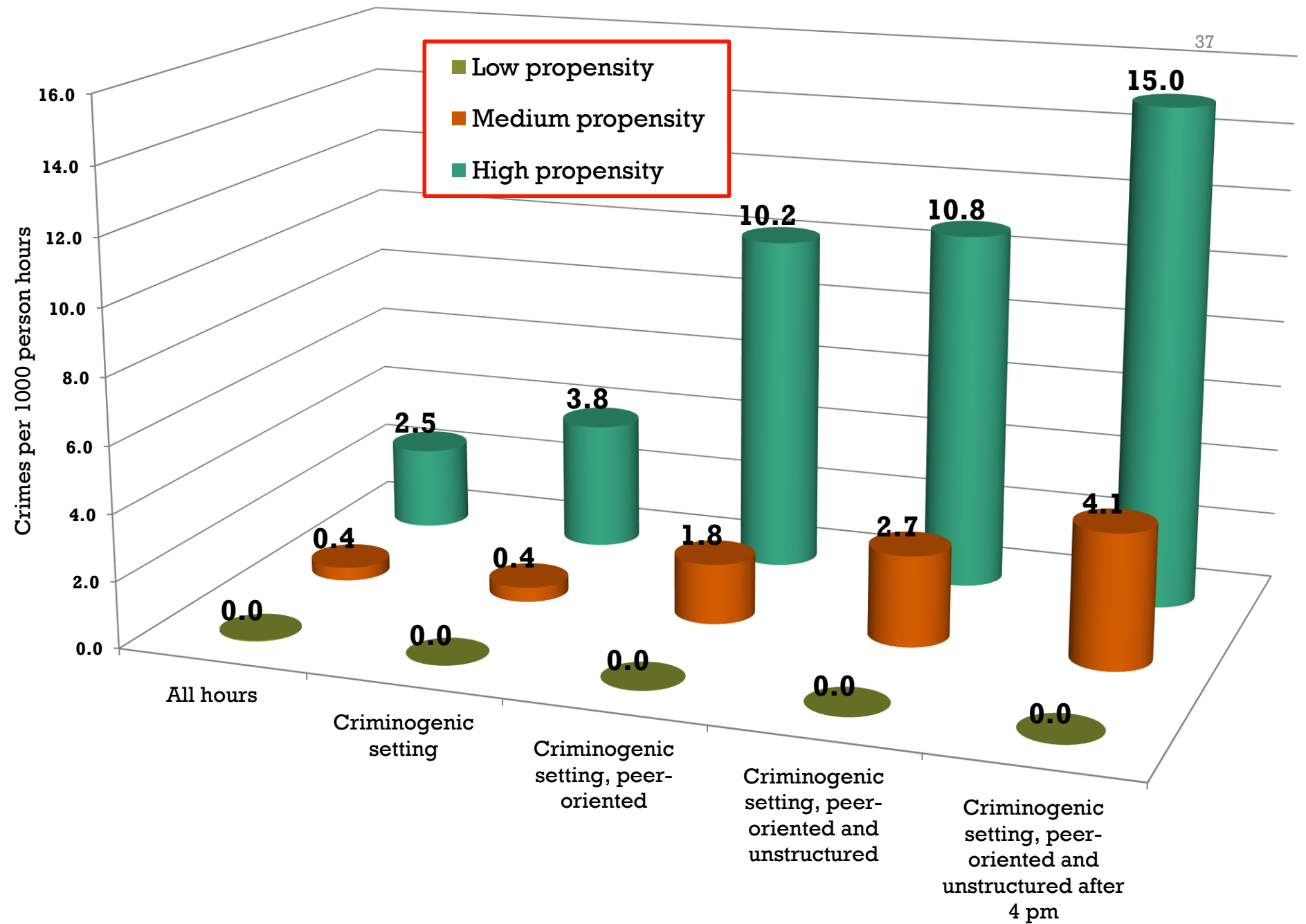
# Person-Environment Interaction in Action.

A different approach to studying risky places.

Act. Place. Who.  
Area & Individual Features.  
Crime Outcome.

Friday							Extra Incidents											
							Alcohol / Drugs			Victimisation			Offending			Weapons		
							No ☐			No ☹			No ☹			No ☹		
							Yes ☹			Yes ☐			Yes ☐			Yes ☐		
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**Person-Environment  
Interaction.**  
(situational, action,  
event level)



## Conclusions.

- Crime concentrations are **AGGREGATIONS OF ACTS**.
- **PEOPLE CARRY OUT ACTS**.
- Study of risky places should be done at the **LEVEL OF ACTS** not places.
- Need adequate **MEASURES OF EXPOSURE** of **KINDS OF ENVIRONMENTS** to **KINDS OF PEOPLE** at the situational level of action.

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