INTRODUCTION TO PROBLEM ANALYSIS

International Problem-Oriented Policing Conference
November 2019
Santa Cruz, California
MENTAL MAPS

• Take out a blank piece of paper
• Think about your jurisdiction/beat/district
  • Draw the major roads and landmarks
• Think about the 3 most common calls for service and/or crimes in your area
• Use letter symbols to note “hot spots” (aka repeat locations)
  • V = Vehicle Crime (Theft from and Theft of)
  • B = Burglary
  • D = Disturbance
  • Etc.
To reduce crime... we need to know what causes it.
An approach/method/process conducted within the police agency in which formal criminal justice theory, research methods, and comprehensive data collection and analysis procedures are used in a systematic way to conduct in-depth examination of, develop informed responses to, and evaluate crime and disorder problems.
WHY TAKE A PROBLEM SOLVING APPROACH?

• Offenders rarely caught
• High-intensity enforcement not sustainable
• Criminal Justice system overburdened
• Most of what police are expected to address isn’t crime
• Residents care most about non-crime issues
PROBLEM ANALYSIS IN CHULA VISTA: DISORDER AT BUDGET MOTELS

- 1,200 CFS per year (27 motels)
  - Most common CFS: disturbance
- 5 motels accounted for 28% of rooms, but 53% of CFS
- Most motel users local
ANALYZING A LONG-TERM PROBLEM

- Initial CFS analysis
- Observations
- Motel “user” surveys
- Manager interviews
- Environmental surveys
- Literature review/site visits
- Investigating causes
INVESTIGATING CAUSES

- Bad neighborhood
- Low room price
- Local clientele
- Insufficient police attention
- Poor management practices
CALLS FOR SERVICE RATE

$44-$60/night + local guests

$45-$55/night + local guests

City Motels - 2005
CITIZEN-INITIATED CALLS NOT AFFECTED BY ENFORCEMENT
DEVELOPING RESPONSES: GOLDSTEIN HIERARCHY

1. Bringing a civil action
2. Legislation mandating prevention
3. Charging a fee for police service
4. Withdrawing police service
5. Public shaming
6. Creating organization to assume ownership
7. Engaging another existing organization
8. Targeted confrontational requests
9. Straightforward informal requests
10. Educational programs
Established city standard

Passed ordinance – August 2006
City could deny permit if high CFS rate

Median: 0.61

City Motels - 2005

Chula Vista Police Department
Motels decided what steps to take

- Guest/visitor screening
- Access control
- Private security
- Rules
DRUG ARRESTS AT MOTELS REDUCED 73%
CRIMES AT MOTELS REDUCED 70%

Data includes drug crimes against the state logged as crime cases. If these incidents are excluded, overall reduction is 65%. Crimes in city are by calendar year, beginning in 2003.
Let’s Talk about Crime

- Why is it important to be specific?
  - Correctly identifying the underlying problem
  - Asking the right analysis questions
  - Having the most appropriate response strategies

- Don’t settle for UCR categories!
  - Rape
  - Robbery
  - Assault
Use the Crime/Problem Analysis Δ

Duck – repeat victims repeatedly attacked by different offenders

Wolf – repeat offenders attacking different targets at different places

Handler

Manager

Den – different offenders interacting at the same place

CRIME

Target/Victim

Guardian
Suppose all situational controls were to be abandoned: no locks, no custom controls, cash left for parking in an open pot for occasional collection, no library check-outs, no baggage screening at airports, no ticket checks at train stations, no traffic lights, etc. would there be no change in the volume of crime and disorder?

-- Gloria Laycock and Nick Tilley, Jill Dando Institute
DON’T BE DISCOURAGED BY DISPLACEMENT DOOMSTERS

• Geographical
  • Crime moves to a different place

• Temporal
  • Crime moves to a different time

• Target
  • Changes from 1 target to another

• Tactical
  • A new method of committing the crime occurs

• Crime Type
  • A different crime occurs
STUDY THE JOURNEY TO CRIME

- Crime Pattern Theory
  - Nodes
  - Paths
  - Edges
- Ways that offenders find suitable targets:
  - Personal knowledge of victim
  - Work
  - Overlapping “activity spaces”
- Offenders – local vs. not local
## Know How Hot Spots Develop

### Crime Generators
- Places where large numbers of people are attracted for reasons unrelated to crime
- **CAUSE:** Many unprotected targets
- What circumstances are targets vulnerable and how to change that?

### Crime Attractors
- Places affording many criminal opportunities well known to offenders
- **CAUSE:** Attractive to offenders
- What is attracting the offenders and how to change that?

### Crime Enablers
- Situations when there is little regulation of behavior at places: rules of conduct are absent or not enforced
- **CAUSE:** Erosion of controls
- Who could control behavior and how can this be encouraged
LEARN IF THE 80–20 RULE APPLIES

- Small proportion of X are responsible for a large proportion of outcomes
  - Repeat Offenders
  - Repeat Victims
  - Hot Spots
  - Hot Products
  - Risky Facilities
<table>
<thead>
<tr>
<th>Address</th>
<th>No. Robberies</th>
<th>% Robberies</th>
<th>Cum. % Robberies</th>
<th>% Addresses (N=106)</th>
<th>Cum. % Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>134 E Main St</td>
<td>25</td>
<td>9.23%</td>
<td>9.23%</td>
<td>0.94%</td>
<td>0.94%</td>
</tr>
<tr>
<td>254 S Clover Av</td>
<td>17</td>
<td>6.27%</td>
<td>15.50%</td>
<td>0.94%</td>
<td>1.89%</td>
</tr>
<tr>
<td>8012 N Grand Blvd</td>
<td>15</td>
<td>5.54%</td>
<td>21.03%</td>
<td>0.94%</td>
<td>2.83%</td>
</tr>
<tr>
<td>8210 N Grand Blvd</td>
<td>10</td>
<td>3.69%</td>
<td>24.72%</td>
<td>0.94%</td>
<td>3.77%</td>
</tr>
<tr>
<td>1430 E Main St</td>
<td>9</td>
<td>3.32%</td>
<td>28.04%</td>
<td>0.94%</td>
<td>4.72%</td>
</tr>
<tr>
<td>365 W Haverty Rd</td>
<td>9</td>
<td>3.32%</td>
<td>31.37%</td>
<td>0.94%</td>
<td>5.66%</td>
</tr>
<tr>
<td>3401 N Staple Dr</td>
<td>8</td>
<td>2.95%</td>
<td>34.32%</td>
<td>0.94%</td>
<td>6.60%</td>
</tr>
<tr>
<td>210 S Daisy Rd</td>
<td>7</td>
<td>2.58%</td>
<td>36.90%</td>
<td>0.94%</td>
<td>7.55%</td>
</tr>
<tr>
<td>4598 N Roan Rd</td>
<td>5</td>
<td>1.85%</td>
<td>38.75%</td>
<td>0.94%</td>
<td>8.49%</td>
</tr>
<tr>
<td>132 E Main St</td>
<td>5</td>
<td>1.85%</td>
<td>40.59%</td>
<td>0.94%</td>
<td>9.43%</td>
</tr>
<tr>
<td>Addresses with 4 (5)</td>
<td>20</td>
<td>7.38%</td>
<td>47.97%</td>
<td>4.72%</td>
<td>14.15%</td>
</tr>
<tr>
<td>Addresses with 3 (15)</td>
<td>45</td>
<td>16.61%</td>
<td>64.58%</td>
<td>14.15%</td>
<td>28.30%</td>
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<tr>
<td>Addresses with 2 (20)</td>
<td>40</td>
<td>14.76%</td>
<td>79.34%</td>
<td>18.87%</td>
<td>47.17%</td>
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<tr>
<td>Addresses with 1 (56)</td>
<td>56</td>
<td>20.66%</td>
<td>100.00%</td>
<td>52.83%</td>
<td>100.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>271</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>
COLLECT YOUR OWN DATA

- Crimes
- Arrests
- Calls for Service
- Field Interviews
- Traffic Data (cites and collisions)

- Don’t restrict yourself to the common police data!
**How do we collect data that's not in a system?**

<table>
<thead>
<tr>
<th>Visual assessments</th>
<th>Environmental surveys</th>
<th>Maps</th>
<th>Time graphs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photos/videos</td>
<td>Intelligence info</td>
<td>Police interviews</td>
<td>Police records</td>
</tr>
<tr>
<td>Stakeholder canvass</td>
<td>Neighborhood surveys</td>
<td>Business surveys</td>
<td>Student surveys</td>
</tr>
<tr>
<td>School personnel surveys</td>
<td>Parent surveys</td>
<td>Offender interviews</td>
<td>Victim interviews</td>
</tr>
</tbody>
</table>
1. Where exactly in the Loma Vista Housing Development does the drug use occur? If you know of more than one location, pick the one you think is the biggest problem.

- Basketball court on Jones St.
- Tot lot next to the parking lot.
- In the parking lot.
- In a specific apartment building (please provide address)
- In the building entryway.
- In the hallway of this building.
- In a specific apartment in the building (please provide apt. number)
- In the laundry room of the building
- On the stoop.

2. What days does the drug use occur at this location? (Circle all that apply.)


3. What times does the drug use occur at this location? (Fill in the blanks.)

   From _________ a.m or p.m? to _________ a.m. or p.m?

4. Who is involved in the drug use at this location? (Check all that apply.)

   - Adult residents
   - Adult nonresidents
   - Children or relatives of residents
   - Other (please specify who) _______________________

5. What kind of drugs are being used at this location? (Check all that apply.)

   - Marijuana
   - Cocaine
   - Heroin
   - Other (please specify who) _______________________

6. Why do you think they pick this location to use drugs (for example, poor lighting, easy escape routes, away from public view, resident allows it)? Please describe:

   ___________________________________________________________________
   ___________________________________________________________________

REWARD: When you return this survey, you will receive a coupon for a free movie.
Examining rates helps to understand if the number of targets contributes to the problem.

Rates describe the number of crimes/incidents per target at risk, during a time period.

Calculating rates
  - Be careful of the denominator!
  - What denominator would you use for…
    - Vehicle break-ins on the street
    - Drug use in parks

Emphasis on high numbers or rates?
Which lot is riskier to park in?

**Swap meet**
- Huge (2,500 spaces)
- Open only 2 days a week
- Park time: 1.5 hours

**H Street Trolley**
- Tiny (300 spaces)
- Open 7 days a week
- Park time: 8 hours

### Comparing Risk Rates

- **Swap Meet**: 42
- **H Street Trolley**: 21

The chart shows the number of auto thefts for each location in 2001, with the risk rate indicated by the color.
What are risky facilities?

Why are they risky?
- Random variation
- Reporting practices
- Many targets
- Hot products
- Location
- Repeat victimization
- Crime attractors
- Poor management
Repeat Victimization

- Hot Dots
- Hot Products
- Hot Spots
- Hot Targets
- Hot People
LIGHTNING STRIKES TWICE, BUT WHEN?

The risk of a home being re-burglarized is highest:

A) within 24 hours
B) 1 to 3 days
C) 4 to 30 days
D) 1 to 2 months

D) 1 to 2 months
Once a home has been burglarized, the risk of re-victimization increases:

A) By a factor of 2
B) By a factor of 4
C) By a factor of 6
D) By a factor of 8

B) Once hit, a house is 4 times more likely to be burglarized than those never burglarized.
| A number admitted taking stolen cars into Mexico for sale | A number mentioned the ease of breaking into older Toyotas (as well as Hondas) | A number said they can use any old Toyota key to unlock some of the Toyotas (didn’t even need to shave the key) | One felon admitted to stealing approximately 1,000 motorcycles, others admitted to stealing several vehicles a week |
DIAGNOSE YOUR HOT SPOT

- Show as dot
- Action at facility, corner or address
- Ex: CCTV in a parking garage or bar regulations

- Show as line
- Action at path, street, etc.
- Ex: change traffic patterns or parking regs.

- Show as area
- Action at neighborhood, area, etc.
- Ex: comm partnerships, neighborhood redev.

## Clerkenwell Hotspot

### Vehicle Type

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Camden</th>
<th>Clerkenwell (n)</th>
<th>Clerkenwell (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>51%</td>
<td>41</td>
<td>18%</td>
</tr>
<tr>
<td>Sports or convertible</td>
<td>3%</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Scooter or moped</td>
<td>26%</td>
<td>95</td>
<td>42%</td>
</tr>
<tr>
<td>Motor cycle</td>
<td>13%</td>
<td>70</td>
<td>31%</td>
</tr>
<tr>
<td>Van</td>
<td>5%</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>2.0%</td>
<td>10</td>
<td>4%</td>
</tr>
<tr>
<td>Not known</td>
<td>0.5%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

From wheredunit to whodunnit
ANALYZING "HOT" PLACES
USING MAPS FOR ANALYSIS

2001 Recovery Rates - Cars

2001 Recovery Rates - Trucks
Recoveries of vehicles stolen in CV

Recoveries of autos stolen in CV

Total recoveries of vehs stolen from target lots

Recoveries of Nissan Sentras stolen from target lots

Nissan Trucks

Ford Trucks

Toyota Camrys

Toyota Trucks

Target Lots

Recoveries of trucks stolen in CV

National Average 62%

(NICB 2001)

58%

69%

63%

43%

45%

44%

32%

13%

9%
Temple University working with Camden Prosecutor’s Intelligence Analysis Section

Using Drug Hotspots to target resources

2007 Drug Reversal Locations

- 7th and York: 84 arrests, 14% from Camden
- 8th and Grant: 17 arrests, 56% from Camden
- 8th and State: 56 arrests, 23% from Camden
- 8th and Berkley: 15 arrests, 40% from Camden
- 3rd and Royden: 6 arrests, None from Camden
- 4th and Clinton: 6 arrests, 50% from Camden

Drug Hotspots:
- High
- Medium
- Low

Reversal location

Drug arrest hotspots:
- Analysis method: 50 foot grid cells
- 350 foot bandwidth
- Quartic kernel surface estimation

Source: Crime incidents, 05-07
ANALYZING “HOT” PLACES

Example 1

Incident Type
For offenders under age 18

- Person
- Property
- Disorder
- Other
EXAMINING RELATIONSHIPS: VEH THEFT & LAND USE
USING HIGH DEF MAPS
**Situational Crime Prevention: Opportunity Blocking**

<table>
<thead>
<tr>
<th>Increasing Perceived Risk</th>
<th>Increasing Perceived Effort</th>
<th>Decreasing Perceived Reward</th>
<th>Removing Excuses</th>
<th>Reducing Provocations</th>
</tr>
</thead>
</table>
Situational Crime Prevention?
RESOURCES TO SUPPORT PROBLEM ANALYSIS

- Center for Problem Oriented Policing (http://www.popcenter.org/)
- http://www.popcenter.org/learning/60steps/
- http://www.popcenter.org/tools/
- http://www.popcenter.org/problems/

Resources to support problem analysis:

- *Crime Analysis for Problem Solvers in 60 Small Steps* by Ronald V. Clarke & John E. Eck
- *Drug Dealing in Privately Owned Apartment Complexes* by Rana Sampson
- *Analyzing Crime Displacement and Diffusion* by Rob T. Guerette
RESEARCHING YOUR PROBLEM: INTERNET RESOURCES

• National Criminal Justice Reference Service: https://www.ncjrs.gov/

• Jill Dando Institute of Crime Science: https://www.ucl.ac.uk/jill-dando-institute/

• UK What Works Centre: https://whatworks.college.police.uk/

• Australian Institute of Criminology: https://aic.gov.au/

• George Mason Center for Evidence Based Crime Policy: https://cebcp.org/

• Rutgers Center on Public Security: www.rutgerscps.org

• LISC Safe Neighborhoods: https://www.lisc.org/our-initiatives/safety-justice

• Simon Fraser Institute for Canadian Urban Research Studies: https://www sfu.ca/icurs.html
Thank you.

Questions? Comments?

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• 858.204.3887