The movement of homicide

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The Diffusion of Homicide

• The idea is nothing new
  • Colin Loftin (1985: 550)
  • “My argument is that serious assaultive violence is subcultural and therefore analogous to disease. Most important, it has the potential to spread explosively in a vulnerable population.”

• Cohen and Tita (1999): Gangs and Drugs
  • Pittsburgh, PA 287 homicides from 1991-1995
  • Crack markets NOT associated with homicide diffusion.
  • Gang homicide evinced patterns of diffusion.
Previous Research

• Looking at crime locations is well-established in criminology
  • Near-repeat literature
  • Hotspots literature

• Demonstrates that crime locations often cluster systematically

• Most studies do not track spatio-temporal distributions
  • They look at spaces cross-sectionally, or at trends in a given space over time, but not at movement over time from space to space
Today’s talk


Elements required for disease to spread

• Source of infection
  • Conditions that increase the likelihood that interactions will lead to homicide.

• Mode of transmission
  • The way in which people come into contact with the elements that increase the likelihood of homicide.

• Population susceptible to homicide
  “infection”
  High-risk groups
Newark, New Jersey

- 24 square miles
- 277,000 people
  - 11,000 per sq/mile
  - (405,000 in 1960)
- 53% black, 31% Hispanic
- 24% of families below poverty
Pin map of homicides in Newark, NJ, 1982-9/2008
Method

- Cluster detection software SaTScan
  - Scan statistic
- Spatio-temporal unit of analysis
  - Census tract-month (28,890 units)
- Buffer area
  - 1.5 mile ellipse
- Population at-risk
  - Black males aged 15-44 years (majority of homicide victims)
Total homicide clusters

Homicides Overall
- Onset 1982
- Onset 1984-1985
- Onset 1987-1988

Homicides Overall
- Onset 2000
- Onset 2001
- Onset 2003

Wards
Newark
Gang-related homicides clusters
Findings

• Found total homicide clusters that existed and moved before any firearm clusters and before the introduction of crack and gangs into Newark

• Initial homicide clusters centered on public housing sites. Those public housing sites shut down and residents relocated to section 8 housing in a different area of the city. Homicide clusters followed them.
Findings (cont.)

• Gang-related homicide clusters emerged out of areas that historically had significantly high homicide rates.
  • Gangs may have emerged there as a response to the real or perceived threat of violence in those areas – the need for protection is met by gang membership.
Homicide Disaggregation

• Homicide is not a unitary offense
  • There are different types of homicides, which are characterized by unique situational characteristics.
  • Variation is due to the fact that this crime can be better characterized as an outcome of various types of specific crime (e.g., drug dealing, gang violence, intimate partner violence), instead of one specific type of crime and/or event.
Homicide motive types

- Intimate partner
- Nonintimate familiar
- Drug-motivated
- Gang-motivated
- Escalating dispute
- Revenge
- Robbery

- 560 homicides (out of 816) from 1997 through 2007 with enough data to classify
Homicide counts by type in Newark (1997-2007)
Method

• Cluster detection software
  • Scan statistic

• Spatio-temporal unit of analysis
  • Census tract-month (12,690 units)

• Buffer area
  • Relative to unit of analysis
  • Buffer area may differ by homicide type

• Population at-risk
  • e.g.: age groups of victims as “at risk”
Non-intimate familial and escalating dispute homicide clusters, Newark, NJ, 1997-2007
Drug-related homicide clusters, Newark, NJ, 1997-2007

Cluster 1:
Observed homicides = 9
Expected homicides = 0.7
Relative risk = 14.13
P-value = 0.007

Cluster 2:
Observed homicides = 13
Expected homicides = 1.9
Relative risk = 7.60
P-value = 0.028
Revenge homicide clusters, Newark, NJ, 1997-2007

Revenge Homicides (n=107)
- Cluster 1 -- Mar 1999 to Mar 2004
- Cluster 2 -- Mar 2005 to July 2006

Cluster 1:
- Observed homicides = 20
- Expected homicides = 2.29
- Relative risk = 10.50
- P-value = 0.000

Cluster 2:
- Observed homicides = 11
- Expected homicides = 0.796
- Relative risk = 15.28
- P-value = 0.000
Gang-motivated homicides (n=42)

Gang-motivated homicide clusters, Newark, NJ, 1997-2007

Cluster 1:
Observed homicides = 3
Expected homicides = 0.006
Relative risk = 505.77
P-value = 0.001

Cluster 2:
Observed homicides = 6
Expected homicides = 0.17
Relative risk = 40.26
P-value = 0.001

Cluster 3:
Observed homicides = 7
Expected homicides = 0.39
Relative risk = 21.46
P-value = 0.003

Cluster 4:
Observed homicides = 4
Expected homicides = 0.021
Relative risk = 207.75
P-value = 0.013
Gang Related Homicides (n=42)
- Cluster 1: July 2002 to July 2002
- Cluster 2: May 2005 to Dec 2005
- Cluster 3: July 2002 to May 2005
- Cluster 4: Dec 2004 to Dec 2004

Revenge Homicides (n=107)
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Overlay of drug-motivated, gang-motivated, and revenge homicide clusters, Newark, NJ, Nov. 2005
So what?

• What do we do with this information?
  • Does this mean we can predict diffusion?
    • Not necessarily
    • Experimentation with retrospective data
  • What types of prevention efforts can we employ?
Focus on gang involvement and subculture

- Gang-involved individuals in 25 to 43% of homicides for escalating dispute, robbery, drug, and revenge categories.
- Potential to avert diffusion by preventing key homicides?
Broad limitations

- Use of census-tract month as geospatial unit
- Use of police reports
- Two violence interventions during study period (2000 and 2005), which may have improved investigative practices
Clustering of homicides

• Roughly 20% of all homicides were captured in a cluster
  • Differed by homicide type: 48% of gang homicides, 29% of revenge homicides, for example
The Code of the Street

- Economic deprivation, social isolation, and distrust of formal social control agents in inner cities gives rise to the Code of the Street. The code...
  - emphasizes attaining status via toughness and willingness to engage in violence during perceived or real disrespect.
  - is more pervasive among young African American males.
  - exacerbates levels of violence in inner cities.
Prior Research

• The Code is more prevalent in areas characterized by economic disadvantage, racial isolation, and perceptions of discrimination.
• Youth who subscribe to the code are more likely to engage and be victimized in acts of violence.
• The Code is more prevalent among gang members.
• Adoption of the code is also related to carrying firearms and related behaviors.
Method

• Operationalized code homicides as incidents that occurred due to the victim and/or offender responding with violence to a perceived public threat to their status.

• Controlled for code homicides, same basic method as two previous studies
Thank You!

Questions?

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