

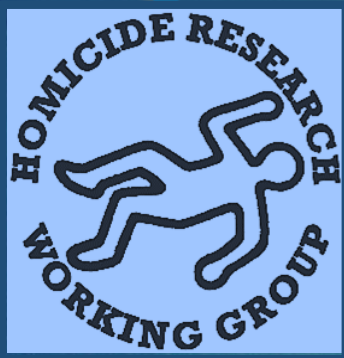
# **2018 ANNUAL MEETING**

## **Homicide on the Rise: The Resurgence of Homicide in Urban America?**

**Clearwater Beach, FL  
May 30 - June 2, 2018**

**Program Chairs:  
Wendy Regoeczi &  
John Jarvis**

**Local Arrangements:  
Dwayne Smith  
& Candi Batton**





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# Program Overview

## Wednesday May 30, 2018

5:00 - 7:00 p.m. Opening Reception – Poolside Patio

**Co-Sponsored by:** The University of South Florida's  
Department of Criminology

Cash bar and hor d'oeuvres begin at 5:00 p.m.

*\*\*\* We would like to extend our thanks to Dr. Michael Leiber and the Department of Criminology at the University of South Florida for their generous donation toward the opening reception \*\*\**

7:00 - 8:00 p.m. Opening Presentation – Bay Room

**Did De-Policing Cause the Homicide Rise?**

Featured Speaker: Richard Rosenfeld

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## Thursday May 31, 2018

7:30 - 8:15 a.m. Breakfast - Rusty's Bistro

8:15 - 8:45 a.m. Introductions – Palm / Bay Rooms

8:15 a.m. *Poster*

*An Exploration of Leisure Themes and Constraints across Serial Homicide*

DJ Williams, Jeremy Thomas, and Michael Arntfield

8:45 - 9:45 a.m. *Featured Speaker*

*Mass Shootings in America: A Crisis of Definition*

James Alan Fox

9:45 - 10:00 a.m. Break

10:00 - 12:00 p.m. *Panel Session 1*

*Mass Shootings*

Chair: Jay Corzine

*Predictive Factors in Mass Shootings*

Ellen Cohn



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**Friday June 1, 2018**

7:45 – 8:30 a.m. Breakfast - Rusty's Bistro

8:30 – 9:30 a.m. *Featured Speaker*  
*Cultural Diversity, Ethnic and Racial Segregation and Homicide*  
Darnell Hawkins

9:30 – 9:45 a.m. Break

9:45 – 11:15 a.m. Panel Session 3 Chair: John Jarvis  
*Patterns and Trends in Homicide*

*Spatial Inequality in Distribution of Homicides in Chicago*  
Andrew Wheeler and Richard Block

*U.S. Gun Violence Trends Suggested by Incident-Based Data, 1995-2015*  
Roland Chilton

*Examining Trends over Time in Homicides and Drug Overdoses*  
Wendy Regoeczi and Thomas Gilson

11:15 - 12:15 p.m. Business Meeting 2

12:15 - 1:15 p.m. Lunch - Rusty's Bistro

1:15 - 2:45 p.m. *Panel Session 4* Chair: Candice Batton  
*Policing and Criminal Homicides*

*The Pace University 'SHOT' Database: Analyzing Multivariate Correlates to Explain Police Involved Shootings in the United States*  
Hasan Arslan

*Police Patrol Strategies to Enhance Homicide & Serious Crime Investigations*  
James F. Albrecht

*Examining the 'Ferguson Effect:' Statistically Supported or Ideological Speculation*  
James F. Albrecht

2:45 - 3:00 p.m. Break

3:00 - 4:30 p.m. *Panel Session 5* Chair: Kim Vogt  
*Serial Killing*

*Bridging the Gap between Genocide and Serial Murder Research*  
Mark Winton

*Is Sexually Motivated Serial Murder a Compulsion, Deviant Leisure, or Both?*  
*Revisiting the Case of Ted Bundy*  
DJ Williams

*Dyadic Death: The Role of Gender on Criminal Sentencing for Serial Killer Teams*  
Emma Fridel

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**Saturday June 2, 2018**

8:00 a.m. - 8:45 a.m. Breakfast - Rusty's Bistro

8:45 a.m. - 10:15 a.m. *Panel Session 6* Chair: Lin-Huff Corzine  
*Data and Methods*

*Examining Lethal and Non-lethal Outcomes of Child Abuse and Neglect Cases*  
Melissa Tetzlaff-Bemiller and Greg Weaver

*Searching for the Stars*  
Tom McEwen

*What is Overkill and What Leads to It*  
Traccy Martins

10:15 a.m. - 11:45 a.m. *Panel Session 7* Chair: Tom McEwen  
*Homicide: The Human Side*

*A First-Hand Experience of the Multi-Faceted Effects of Serial Killers: The Case of the Seminole Heights Killer*  
Bryanna Fox

*The Pulse Scrolls*  
Nik Lampe, Lin-Huff Corzine, and Jay Corzine

*"It's going to be extra fun!" The Role of Leisure in an Atypical Homicide Case Involving Teenage Offenders*

Jolene Vincent and DJ Williams

11:45 a.m. - 12:00 p.m.      Concluding Announcements



## Did De-Policing Cause the Homicide Rise?

Richard Rosenfeld  
University of Missouri - St. Louis

Joel Wallman  
Harry Frank Guggenheim Foundation

After falling almost continuously for over two decades, US homicide rates rose abruptly in 2015. The homicide increase occurred in the midst of protests and social unrest surrounding controversial incidents of police violence against unarmed African-Americans. Debates ensued concerning the causes of the homicide rise -- indeed, about the reality of the rise itself -- but the dominant narrative attributed the increase to de-policing. The basic idea, captured in the media catchphrase “the Ferguson Effect,” was that the police had disengaged from proactive enforcement (i.e., they made fewer stops and arrests) because they feared heightened legal liability or having their identities exposed on social or traditional media. Less enforcement led to more crime.

Other than a few case studies and anecdotal media reports, we are aware of no systematic studies of the relationship between police disengagement and the homicide rise. We report the results of such a study here. To disclose a possible relationship between police activity and the 2015 homicide spike, we examined the association between homicide rates and arrest rates in 53 large US cities between 2010 and 2015. Our analysis is based on structural equation panel models that incorporate potential effects of homicide rates on arrest rates by treating arrest rates as endogenous (i.e., dependent on homicide rates). We found no association between reduced rates of arrest and elevated rates of homicide. In several instances, in fact, we found a positive association between arrests and homicide. Whatever sparked the 2015 homicide rise, evidently it was not de-

policing, at least as reflected in arrest rates. We recommend that future research direct attention to other factors that may have contributed to the recent homicide rise, including the expansion of illicit drug markets in the wake of the opioid epidemic and lethal violence sparked by plummeting police legitimacy.

# An Exploration of Leisure Themes and Constraints across Serial Homicide Cases

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<sup>2</sup>Idaho State University USA

<sup>3</sup>Western University, Ontario, Canada

<sup>4</sup>Murder Accountability Project  
(Washington, DC)

## **Introduction and Background**

It is well-known that many serial murderers kill for pleasure and enjoyment. However, scholars have only recently begun to apply leisure and recreation theory to understanding serial homicide. Robust leisure theories can provide valuable insights into how intrinsically-motivated serial homicide is planned, structured, experienced, and connected with specific offenders' identities. In many cases, intrinsically-motivated serial murder appears to function as an extreme form of serious, deviant leisure (Rojek, 1999; Williams, 2017, Williams & Walker, 2006). However, while scholars have begun to explore how some forms of serial homicide seem to reflect core theories of leisure science, such as the Serious Leisure Perspective (SLP, Stebbins, 2001) and flow theory (Csikszentmihalyi, 1990), empirical studies on serial homicide as potential leisure experience are virtually nonexistent. Thus, this study empirically explores potential leisure themes that may be embedded in descriptions of diverse serial homicide cases.

## **Research Question**

The primary research question for this study was, "Are leisure-related themes present across large numbers of serial homicide cases, and if so, how might leisure

function within such cases? A second purpose, depending on initial findings, was subsequently to explore potential intrapersonal, interpersonal, and structural constraints to murder as potential leisure experience. Leisure constraints and negotiation theories focus on how people negotiate barriers to their desired leisure experiences. Intrapersonal constraints include “psychological conditions that are internal to the individual,” whereas interpersonal constraints “arise out of interaction with others such as family members, friends, coworkers, and neighbors” (Chick & Dong, p. 338). Structural constraints “include such factors as lack of opportunities or the cost of activities that result from external conditions in the environment” (p. 338).

### **Methods**

A flexible, open-coding, content analysis procedure was applied to key texts (Fox & Levin, 2015; Hickey, 2016; Leyton, 2005; Newton, 2006), along with court documents pertaining to hundreds of cases of all types (i.e., male, female, solo, team, healthcare) of intrinsically motivated serial homicide. Line-by-line coding identified numerous leisure and recreation descriptors (particular attention was given to offenders’ narratives), which were then grouped into general themes. Documents were subsequently analyzed to identify potential intrapersonal, interpersonal, and structural constraints to murder as desired leisure experience.

### **Results and Discussion**

Numerous leisure descriptors were identified in descriptive cases, which were represented thematically as: (a) serial murder as a game; (b) murder for thrill and intense sensations; (c) murder for simple fun and enjoyment; and (d) murder as a unique form of personal celebration. Numerous offenders used the term “game” or their process of

killing was described as such. Particular game structure varied across offenders from simple to more complex, yet reflected the four identified categories of games—*Agon*, *Alea*, *Mimicry*, and *Vertigo*—which is consistent with recent research by Arntfield and Swart (2018). Killing for thrill and intense sensations or for simple fun and enjoyment seemed to be distinct themes, which suggests that there may be more cases of serial murder as casual leisure (using an SLP approach) than has been recognized. Somewhat surprisingly, this analysis found that several offenders chose public holidays and/or special occasions on which to commit murder, which suggests the possible intersection of important psychological and sociological variables involved in specific offender homicidal motivations.

Findings here show that unlike constraint negotiation processes in most leisure activities (Godbey, Crawford, & Shen (2010), the ability to negotiate constraints to murder-as-leisure is necessarily hierarchical. In other words, offenders must successfully negotiate intrapersonal constraints by applying neutralization techniques and cognitive distortions, before then negotiating various interpersonal and structural constraints. The most frequent interpersonal constraint identified in this study pertained to spouses (or committed partners) and family members. Simply put, offenders could not kill as much as they would have liked due to family roles and commitments. However, these same interpersonal constraints simultaneously functioned as murder-as-leisure facilitators by allowing offenders to avoid suspicion due to their regular involvement in family and community obligations. The most frequent structural constraint identified herein was literal incarceration. Prior to state and federal laws in recent decades preventing the release of multiple homicide offenders, several infamous serial murderers had been

paroled only to continue their homicidal activities. Available money may be a structural constraint for those offenders who seek to operationalize elaborate fantasies requiring specific instruments and equipment. Some offenders purchased or simply stole materials they needed. Many offenders choose low cost methods to kill, and a few explicitly mentioned how little it cost them to commit their murders. Findings also suggest that cultural and political climate impacts structural constraints to murder-as-leisure. For example, compared to North America, less media visibility in some countries, such as Russia and China, allow offenders to avoid detection and kill greater numbers of victims (Newton, 2006).

### **Conclusion**

This study draws from hundreds of case descriptions of diverse serial homicide offenders in order to better understand how intrinsically motivated serial homicide may function as leisure experience. Findings provide insights into broad leisure motivations, yet the process of homicide appears to play out somewhat differently for specific offenders. Applying SLP (Stebbins, 2001) to serial homicide cases may provide additional insights into differences in leisure motivations, along with how behavioral processes develop, regarding specific offenders. For example, drawing on findings herein, some offenders may kill for simple fun and enjoyment and perhaps may structure killings as a simple game, which reflects casual leisure, while other offenders may put forth considerably more effort, knowledge, and skill into killing, which is structured as more serious leisure. These possibilities are currently being explored (Williams & Vincent, in press). An unexpected finding of the present study focuses on when offenders choose to kill. Homicide as a personal celebratory event is a valuable new insight that



speaks to the psychosocial profiles of several offenders who kill on particular days and times of year. While findings herein provide interesting forensic science insights, much more research is needed to understand how serial homicide becomes a preferred leisure experience for some individuals.

**\*Note:** A full length version of this study was recently published in the journal *Leisure Sciences*.

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Williams, D J, & Vincent, J. (in press). Application of the Serious Leisure Perspective to intrinsically motivated serial homicide. *Deviant Behavior*.

Williams, D J, & Walker, G. J. (2006). Leisure, deviant leisure, and crime: Caution: Objects may be closer than they appear. *Leisure / Loisir*, 30, 193-218.

# Mass Shootings in America: A Crisis of Definition

James Alan Fox  
Northeastern University  
HRWG, Clearwater, FL

1. A sea change in level of interest in mass shootings over the past 40 years
  - a. Surge in public and scholarly attention since 3 major shootings in 2012
2. Trends in mass murder, mass shootings, and mass public shootings show little change
  - a. Volatility with occasional spikes
  - b. Slight rise in victim counts in past few years due to few large-scale incidents
3. Why the disconnect between perception and reality?
  - a. Seeing is believing: Broadcast media presence, technology, and online/social media
  - b. Bad news is big news: Wide dissemination of deeply flawed trend data
  - c. Mass confusion: The new alternative definition of mass shooting
4. Is naming names a problem?
  - a. Anderson Cooper's campaign and Adam Lankford's letter
  - b. Names, photos or just TMI?
  - c. Obsession with records
5. School shootings
  - a. Recent survey results show fear is rampant
  - b. Risk is low, and lower than in earlier decades
  - c. Flawed and sound responses
6. Campus rampages
  - a. An "old" pattern emerges
  - b. More flawed and good responses
7. Conclusion

# Predictive Factors in Mass Shootings

Daniel Ruderman and Ellen G. Cohn

## **ABSTRACT**

Although researchers have found temporal patterns in violent crime and support for a relationship between temperature and violence, research on homicide shows less consistent results and no research on mass murder has been conducted. This study examines predictive factors in mass shootings, the most common form of mass murder. We focused on temporal patterns and the impact of temperature, and found that mass shootings are significantly more frequent on weekends, major holidays, hotter seasons, and when the temperature is higher than usual. The risk of multiple mass shootings on a given day also increases with temperature. The risk of mass shootings is greatest on the July 4<sup>th</sup> holiday.

## **INTRODUCTION**

On October 1, 2017 a mass shooting in Las Vegas, Nevada left 58 people dead and over 500 injured. In the wake of such events, the focus tends to be on offender motivation. However, understanding broader patterns in the occurrence of violent crime may not only help researchers discern their causes but also help criminal justice professionals prevent future crimes. While there is considerable support for the existence of a relationship between temperature and violent crime, as well as clear evidence of weekly and seasonal patterns for violent crime, homicide research shows far less consistent results. Additionally, research has failed to distinguish between the various forms of the crime, and there has been no research specifically examining how weather and temporal factors affect patterns of mass murder. This study examines predictive factors in mass shootings, the most common type of mass murder, with a focus on temporal patterns and the impact of temperature and holidays on the likelihood of mass shootings.

## **TEMPORAL AND TEMPERATURE VARIATION OF VIOLENT CRIME**

Research consistently shows a relationship between violent crime and temperature (see, e.g., Anderson, 1989; Anderson et al., 2000; Cohn & Rotton, 1997; Field, 1992; Harries & Stadler, 1983, 1988; Horrocks & Menclova, 2011; Jacob et al., 2006; Mares, 2013; Ranson, 2014; Schinasi & Hamra, 2017). For example, Jacob et al (2006) reported that an increase in average weekly temperature of 10°F was associated with a 5% increase in violent crime. Horrocks & Menclova (2011) found that violent crime increased with temperature until about 80°F, after which point it began to decrease; these are similar to results obtained by Cohn (1990), Cohn & Rotton (2000), and Rotton & Cohn (2000). Research into seasonal patterns of violent crime also generally find peaks during the summer months (see, e.g., Breetzke & Cohn, 2012; Cohn & Rotton, 1997; Harries, 1989; Hird & Ruparel, 2007; Rock et al., 2008; McDowall et al., 2012), which of course are characterized by warmer temperatures. There is also a clear weekly cycle for violent crime, with crime increasing on weekends and decreasing during the week (see e.g., Harries & Stadler, 1983, 1988; Harries et al., 1984; LeBeau & Corcoran, 1990; Shepherd, 1990). Violent crimes also appear to be more frequent on major holidays (Cohn & Rotton, 2003).

The relationship between temperature and homicide is less clear (see e.g., Maes et al., 1994; McDowall et al 2012; Yan, 2000). McDowall et al (2012) found annual crime variations of about 7% for homicide, but this was not statistically significant independent of season. Maes et al (1994) found no relationship between homicide and temperature in Belgium, and Yan (2000) found no

significant relationship between temperature and homicide rate in Hong Kong. Research does consistently find a weekly cycle for homicide, with an increase on weekends (see e.g., Abel et al, 1985; Wolfgang 1958; Ceccato, 2005; Feldman & Jarmon, 1979; Lester, 1979; Lundsgaarde, 1977).

### **CURRENT STUDY**

This study attempts to identify factors that put a given day at greater risk of a mass shooting event. While “mass murder” and “mass shooting” are often used interchangeably, a mass shooting is generally defined as an incident in which four or more victims were injured or killed in a single location during a shooting event. We believe it is important to examine this broader category of mass shootings because our focus is on factors that influence the likelihood of these events, regardless of particular circumstances that may limit fatalities (see e.g. Felson and Steadman 1983; Weaver et al. 2004). Thus, the shooter’s intent is likely better reflected in the number of victims shot than in the number of deaths. This is the perspective proposed by Harris et al. (2002, p.156), who stated that homicide research “might be facilitated by focusing on potentially lethal criminal actions rather than on completed homicides per se.”

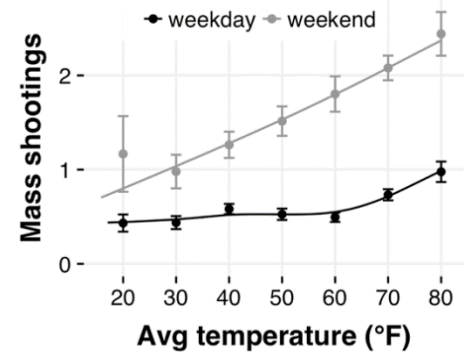
We hypothesized that factors known to influence violent crime in general will also specifically impact the number of mass shootings on any given day. Data on mass shootings were obtained from the Gun Violence Archive (GVA). The GVA is compiled from media sources and information from “2,000 LEO, government and media sources daily...our numbers are based on provable reported individual incidents” (Gun Violence Archive, 2017). Although this method of data collection has inherent bias, it is highly unlikely that any such bias would be correlated with the predictors we examine, such as season, major holiday, and temperature anomaly.

We obtained data on mass shootings in the continental United States from 2014 through 2017. We restricted our analysis to the continental U.S. The dataset includes the date of the shooting, the state, the number of persons killed, and the number injured. The total number of mass shootings is 1,337, an average daily rate of 0.91. This rate varies by year, with values of 0.75, 0.92, 1.05, and 0.95 in 2014 through 2017. These mass shooting rates correlate with the corresponding average daily temperatures of 53.1, 55.2, 55.9, and 55.5°F (slope=0.1 shootings/day/°F, Pearson correlation  $r=0.97$ ,  $p=0.03$ ).

Temperature information was obtained from the National Centers for Environmental Information. Because temperature is confounded with time (week of the year), it is unclear how to assign any discovered relationship between temperature and mass shooting rate. To address this, we used temperature anomaly, or deviation from the expected temperature. A positive temperature anomaly indicates that temperature was warmer than normal for a given week of the year. A few criminal behavior studies have examined temperature anomalies. Several researchers (Hsiang et al. 2011; O’Loughlin, et al. 2014) have found links between temperature anomalies and global conflict. Williams et al. (2015) found a positive relationship between temperature anomaly and assaults. Schinasi and Hamra (2017) found that violent crime was strongly associated with temperature deviations.

For each day, a continental U.S. average temperature was computed using the average daily temperatures at each weather station in the contiguous 48 states, weighted by 2016 state population. We then computed the difference between this daily average temperature and its average for its week of the year (1 to 53) across the entire data set to obtain the temperature anomaly. While this metric is intended to reflect temperature anomalies throughout the continental U.S., it is not a direct reflection of the environmental conditions experienced by any particular segment of the U.S. population. In this pilot study, we opted to examine a single coarse-grained value that likely correlates with the temperature experienced during mass shooting incidents on any given day.

We included control variables for week of the year, weekends, and “epoch day”, a sequence variable whose values ranged from 0 on the first day of the study to 1,460 on the last. It controls for any overall temporal trend in mass shooting rate. Additionally, we included a factor for whether a day is any of nine major national holidays: New Years’ Day, Martin Luther King Jr. Day, Presidents’ Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, and Christmas Day.



## RESULTS

Figure 1 shows the mean and standard error of mass shooting counts binned every 10°F separately for weekdays and weekends, accompanied by smoothing lines for the complete data set. All bins except 20°F have significantly higher daily mass shooting rates on weekends than on weekdays ( $p < 0.05$ , one-sided Welch t-test, Holm corrected). The average rates are 1.7 per day on weekends and 0.6 per day on weekdays. The mass rate approximately doubles between the lowest and highest temperatures (from 20°F to 80°F).

**Figure 1:** Daily mass shootings by US temperature on weekdays (black) and weekends (gray). Points correspond to mean values within 10°F bins. Vertical intervals reflect standard errors of the estimates.

To quantify the association between the mass shootings and temperature, weekend, and major holiday, we applied a generalized linear model (GLM) for daily mass shooting rate, with Poisson statistics. Since we expect that separate shooting events on a given day occur independently, Poisson statistics are appropriate. Social interactions depend on vacation, school, and other annual cycles, so we included the calendar week (1 to 53) as a categorical factor.

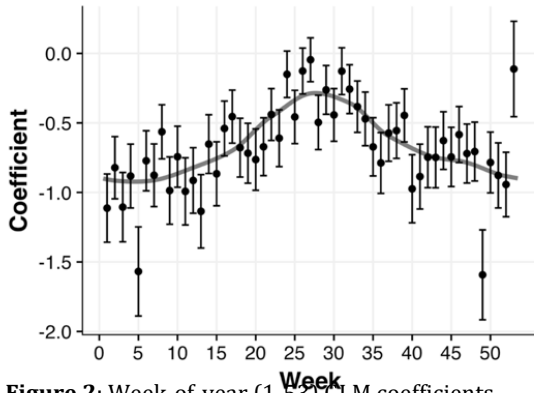
The model’s coefficients (except for week) are shown in the Table. Because of the Poisson GLM’s logarithmic link function, the coefficients alter the predicted rate of mass shootings in an exponential fashion. Thus, with other factors held constant, a weekend day has a 2.8-fold ( $e^{1.03}$ ) increase in mass shooting events over weekdays, and major holidays have on average 1.8 times ( $e^{0.60}$ ) as many mass shootings as non-major-holidays. The *epoch\_day* coefficient represents an increase in mass shooting rate of approximately 6% per year ( $p=0.025$ ), independent of other factors, such as temperature.

Factor	Estimate	Standard error	Units	p-value
epoch_day	0.06	0.03	year <sup>-1</sup>	0.025
weekend	1.03	0.06	1	<2e-16
major_holiday	0.6	0.2	1	2.1e-4
temp_anomaly	0.035	0.007	°F <sup>-1</sup>	3.3e-6



The temperature effect is reflected in two factors: temperature anomaly and week-of-year. Positive temperature anomaly (an unusually hot day) is associated with an increase in mass shooting rate, with a coefficient of 0.035 per °F ( $p < 0.001$ ). Thus, for a day that is 10°F hotter than expected, the model fit predicts a corresponding 42% increase in mass shooting events. The week-of-year effect is shown graphically in Figure 2, in which the mass shooting rate peaks around week 27 (early July) and reaches a minimum in early January. These coefficients are associated with

**Table:** Coefficient estimates, standard errors, units, and p-values for rejecting the null hypothesis of zero coefficient value for the GLM  $glm(shooting\_count \sim week\_of\_year + epoch\_day + weekend + major\_holiday + temp\_anomaly, family=poisson)$ .



**Figure 2:** Week-of-year (1-53) GLM coefficients (dots) and their standard errors (bars). Gray curve is LOESS smoothed data with periodic boundary.

average weekly temperature ( $p < 0.001$ , correlation test), having a Pearson correlation coefficient of 0.62. Because

the week 53 data include four New Year's Eves (and one December 30<sup>th</sup>), the higher shooting rate than expected for the temperature likely reflects this holiday.

We next modeled the probabilities of different mass shooting counts. We limited the analysis to the 417 weekend days in the data set, since they have the largest shooting counts. We partitioned days into three classes: no mass shootings (24%), one mass shooting (26%), and multiple (2+) mass shootings (50%). We fit a multinomial logistic regression model to the temperature

dependence of the three class probabilities. The results are shown in Figure 3. For the coldest weekend days, there is a nearly 50% chance of no mass shootings. At the other extreme, very hot weekend days have around a 65% chance of multiple mass shootings. Interestingly, the probability of one mass shooting on a weekend day is fairly temperature independent.

Finally, we asked if there is a particular day of the year which is the most dangerous in terms of mass shooting rate. We used a Poisson GLM to estimate each calendar day's expected weekend mass shooting rate based on the day of the year, and whether it fell on a weekend. We found that July 4<sup>th</sup> has the highest expected weekend mass shooting rate of 7.2 per day (95% confidence interval: 4.3 to 12.0), much larger than the median rate of 2 per day.

## DISCUSSION

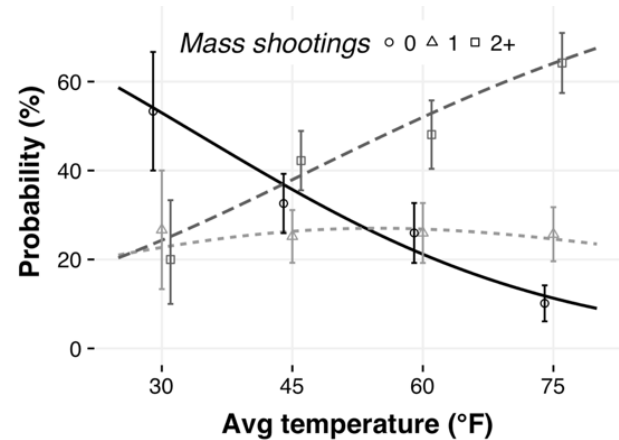
This study focuses on identifying factors associated with the risk of mass shootings on any given day in the continental United States, extending the existing research into the effect of temporal variables and weather patterns on violent crime. Our research has produced several important findings. Consistent with prior research into violent crime in general, and homicide in particular, the results of this study suggest that the frequency of mass shootings is significantly related to day of the week (weekends) and major holidays.

Overall, mass shootings are almost three times as frequent on weekends than on weekdays and about twice as frequent on major holidays than non-holidays. The risk of multiple mass shootings occurring on a given day also increases with temperature. To avoid possible confounding between temperature and temporal factors such as seasonality, we examined temperature anomalies and also found a significant relationship between mass shootings and temperature anomaly, amounting to 42% increase in the shooting rate for an anomaly of 10°F. Finally, we identified the July 4<sup>th</sup> holiday as being the most dangerous time of the year with respect to mass shootings.

The positive relationship between temperature anomaly and mass shootings is consistent with expectations based on Temperature/Aggression and Routine Activities (RA) theories, both of which suggest that warmer temperatures are linked to increasing rates of crime. Additionally, the effects of temporal factors on mass shootings are consistent with predictions derived from RA theory. Mass shootings are significantly more likely to occur on weekends and on major holidays, both of which are times when routine activities show greater variability. However, it is important to recognize that the relationships identified in this research are not necessarily causal in nature. We are not claiming the data support the argument that warm temperatures or weekends or major holidays cause mass shootings. However, if the relationship between temperature and mass shootings is causal, this could have important ramifications for crime.

Limitations of this study include the fact that that we used national rather than local temperatures. However, given the relatively small number of cases in our dataset, even looking at mass shooting by state would have been impossible. The use of temperature anomalies, rather than raw temperatures, was an attempt to mitigate this by capturing variations from average temperature. The study was also limited by the need to use data on mass shootings obtained from an independent agency, rather than from official crime statistics. Finally, the information provided in the data set was limited. There was no information on the time of day of the shooting, which made it difficult to identify shootings that occurred just after midnight and might be related to the previous day. Nor was there any information on the victim/offender relationship (if any), making it impossible to separate out domestic and non-domestic shootings.

Future research could build upon our results in several ways. First, our dataset includes any incident in which at least four victims were shot but is not limited to those events which resulted in deaths. It would be instructive to separate out those events in which no deaths occurred, to determine whether there are any differences in the factors affecting injury-only mass shootings versus shootings involving fatalities. Similarly, it would also be interesting to compare mass murders (events in which there were four or more fatalities) to other mass shootings. Second, our research is limited to only a small number of independent variables and our measure of temperature does not reflect the actual environmental conditions present during the mass shootings. In future research, it would be interesting to study mass shootings by state and use regional temperature data, as well as incorporating sociodemographic factors such as population composition and density, average income, firearm ownership, and so on. Third, future research



**Figure 3:** Data statistics and multinomial logistic regression model fit to probabilities of three weekend day classes (0, 1, and 2+ mass shootings) as a function of average continental U.S. temperature. Data statistics, binned every 15°F, show mean class probabilities (symbols) and 90% binomial confidence intervals (error bars). Continuous lines represent model fit (solid: 0 mass shootings, short dashes: 1 mass shooting, long dashes: 2+ mass shootings).

could consider the effect of these factors on victim counts and determine whether it is possible to not only predict numbers of shootings but also numbers of victims.

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# A Closer Look at Victim Characteristics of Mass Killings

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## **Introduction**

Based on popular media coverage in recent years, mass murder has increasingly sparked public attention, while even motivating movements for criminal justice policy reform and stricter gun control (Taylor, 2018; Blair & Schweit, 2014). Additional efforts to steer future mass murders away from infamy have included encouraging news outlets to change their headlines to focus on the victims as well as gallant bystanders, rather than highlighting the perpetrator (Levin & Wiest, 2018). Although mass killings only account for a small percentage of the total number of homicides, since 2000 mass murders have spiked with little explanation (Archer, 2012). There have been numerous definitions created to explain what qualifies as a mass murder event. For this study, the definition by the Federal Bureau of Investigations (FBI) will be used, which states, “four or more murders committed by one or more offenders without a cooling off period” (FBI, 2005).

The growing body of literature on mass murders has primarily studied the influence of media perceptions on school mass killings, an exploratory analysis of offender and victim characteristics of documented cases, and the limitations of gathering reliable data from a single source. Given the difficulty of a single source for mass murder data, news outlets and the Supplementary Homicide Report (SHR) are currently the primary sources used to help construct a better understanding on these types of incidents (Huff-Corzine, McCutcheon, Corzine, Jarvis, Tetzlaff-Bemiller, Weller, & Landon, 2014;



Duwe, 2007; Fox & Levin, 2012). Of the mass murder cases studied in previous literature, the most common location of these events occur in residential settings, dissimilar to the emphasis the media portrays on mass murders in public settings (Huff-Corzine et al., Duwe, 2007; Taylor, 2018). Therefore, using data from USA today and the FBI's SHR from 2006-2017, this study will look specifically at 185 mass murders that have been labeled as family killings. Offender, victim, and situational characteristics will be examined with an underlining focus on attempting to gain a better understanding of the individuals most commonly affected by mass murder incidents.

### **Literature Review**

Research has lacked in investigating mass murders and mass shootings (Fox & DeLateur 2013). While mass shootings continue, the mass media is responsible for reflecting a negative and often false idea of who and what these offenders tend to be (McGinty, Webster, and Barry, 2013). Mass media tend to portray those responsible for mass casualties as white, male, lonewolf, and mentally ill (McGinty et al., 2013). The media is also responsible for creating fear among the public (Elsass, Schildkraut, and Stafford, 2014). Furthermore, shootings have been referred to as "media spectacle" (Elsass et al., 2014). Mass shootings and mass killings have gained media attention; with 24 hours news coverage when an event occurs, it is not surprising that society is now inclined as viewing these horrific acts as a social problem with a drastic need of change (Elsass et al, 2014).

Most literature discussing mass murder has found that the most common type of this crime occurs where the relationship between the victim and offender are within the family, also known as familicide (Taylor, 2018; Liem & Reichelmann, 2014; Duwe,

2004; Fox & Levin, 1998). Familicide, as defined by Wilson, Daly, and Daniele (1995), is a “multiple-victim homicide incident in which the killer’s spouse and one or more children are slain” (p. 275). Compared to other types of homicide and mass murders, familicide is regularly often overlooked. Conversely, there is a severe lack of literature specifically focused on family mass killings.

Research suggests that familicide were most commonly seen prior to the 1970s; approximately 52% of mass murders between 1900 and 1975 consisted of family killings (Duwe 2004). Though familicide has been documented since the 1900s, family members were most frequently victims in every decade except during the 1900-1920s (Duwe, 2004). Typical perpetrators involved older men killing their wife and children (Wilson et al, 1995; Duwe, 2004; Liem, Levin, Holland, & Fox, 2013; Liem & Reichelmann, 2014) and usually killed themselves afterwards (Duwe, 2004; Wilson et al, 1995); Duwe (2004) also claims that these offenders were also more likely suicidal prior to 1976. While motives may vary (Harper and Voigt, 2007; Leveilee, Marleau, & Dube 2007; Duwe, 2004; Liem & Koenraad, 2007), financial instability and revenge tend to be common among male perpetrators (Duwe, 2004; Wilson et al, 1995) while for female perpetrators, it was usually a way to end an abuse (Adinkrah, 1999).

The motivation of this extreme type of intrapersonal violence have been categorized as the perpetrator acting out through a sense of loyalty, e.g. a despondent father trying to save his loved ones from unhappiness, or revenge (Fox & Levin, 1998; Liem & Reichelmann, 2014). While these mass killings may promote a call for tougher gun-laws, it has not always been the case. Until recently, guns are now a clear choice of weapon (Wilson et al, 1995; Brewer and Paulsen, 1999). However, prior to the 1930s,

guns were less used (Duwe, 2004). Furthermore, Fox and Levin (1994) argue that the rise of mass murder incidents since the 1960s and the increased fatality rates are correlated to the use of firearms.

Another form of familicide, although far less common, is the killing of one's parents and/or siblings (Liem et al., 2013). Given the low prevalence of this rare event, most cases are analyzed through case studies and small nonrandom samples, but results have found that most youthful offenders between the ages of 14-21 years old are males, who kill with a single weapon, e.g. a firearm, and currently live at home during the time of the crime (Vinas-Racionero, Schlesinger, Scalora, & Jarvis, 2017; Ewing, 1997; Heide & McCurdy, 2010; Shon & Roberts, 2010). Similar to older offender, these acts are typically the result of long-term problems within the family, which may be triggered by an event, such as a divorce between parents, or arguments stemming from a feeling of inadequacy of the perpetrator in school or work performance (Vinas-Racionero et al., 2017; Heide & McCurdy, 2010). However studies of multiple family homicides normally adopt the familicide definition that includes at least the killing of two family members, thus resulting in a limited body of literature patterns of family mass murder, the killing of at least 4 people.

### **Research Study**

This study strives to add to existing literature on family mass murders across the United States. There is a lot of public discussion on gun control, and public mass killings. However, there is limited research on a more comprehensive look on mass killings, especially within families.

## Data

Data for this study will be collected through *USA Today* and the FBI's Supplementary Homicide Report to provide a comprehensive overview of the most current trends of family mass murders. In this exploratory study, data will be collected to gather more information on offender and victim relationships, situational factors, weapon type, and demographic variables. Similar to previous literature of familicide and mass murder in general, we expect to find that a majority of the victims will be white, a spouse or child of the perpetrator, killed by a firearm. Once the data is gathered, a frequency distribution will be calculated to get an overall look on family mass killings across the country.

## Analysis

This is a work in progress; we are currently in the data collection phase. Once data is complete, we will run analysis and share results.

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# First Responders and Mass Casualty Incidents

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First responders to crisis events have the inevitably difficult tasks of managing unimaginable situations with challenging complexities and often the looming risk of further casualty. This work, utilizing interview protocols with leaders in over 60 crisis response incidents from around the United States and abroad, provides some insights thru the lens of on-scene decision-makers as to potential best practices, challenges, training tactics and tools, and other factors that influence effective and efficient outcomes. While most homicide studies focus on prevention and causes, the response to homicidal incidents—particularly mass casualty incidents—is arguably just as important. While this original proposed project was not intended to be homicide-specific, a large number of incidents involve different types of lethal outcomes thus yielding important results that are likely valuable to the field.

*\*The abstract above reflects the content of the work we have been engaged in but such work has not been cleared for release. The following publicly available reprint is intended to provide context and intent to working group participants for debate and discussion.*

## **Leadership During Crisis Response**

### Challenges and Evolving Research

*By Leonard Johns, M.A., and John P. Jarvis, Ph.D.*

Law enforcement professionals look at a newspaper, television, or other form of social media and realize that critical incidents can emerge almost anywhere and occur at a seemingly faster rate than in years past.<sup>1</sup> Difficult to predict, these crisis situations require undivided attention and an immediate and appropriate response from authorities. Such events test leadership abilities in ways different from day-to-day police work and many other professions.

With some frequency, incidents occur in presumably safe environments, such as hospitals, primary schools, universities, places of worship, sports arenas, and movie theaters. Many have required significant interagency responses that include leaders from the law enforcement community. When such tragedies occur, police leaders act almost instinctively to save lives and protect the public.



The authors will focus on two purposes relative to exercising leadership during a crisis: 1) compare and contrast leadership in day-to-day law enforcement operations with skills required in crisis response, including a brief overview of leadership practices in other fields; and 2) describe and provide anticipated findings of an evolving study of leadership in crisis situations. This FBI study may offer insight into more effective law enforcement crisis leadership. The results of such an effort likely will illuminate some empirical evidence of leadership behaviors that may assist in successfully responding to critical incidents.

## **CHALLENGES**

### **Training**

Since the terrorist attacks of 9/11, several educational and training programs, including those that leverage tabletop and full-scale exercises, have focused on enhancing law enforcement's response to critical incidents. For example, in the wake of lessons learned from the Westgate Mall Attack in Kenya on September 21, 2013, the FBI's Crisis Management Unit (CMU) developed an exercise regimen aimed at testing interoperability within the response, communication, and engagement efforts with civilian partners.<sup>2</sup> The FBI then disseminated this program to its 56 field divisions, resulting in up to 10,000 individuals from 500 agencies receiving this crisis-response training.<sup>3</sup>

While these endeavors have improved agencies' responses to critical incidents, few efforts have focused on the exercise of leadership during such events to identify shareable best practices. Due to the dynamic and unforgiving nature of these crises, law enforcement organizations would benefit from research on leadership principles and best practices applicable to on-scene commanders during a crisis.<sup>4</sup>

### **Definitions**

Defining what constitutes a critical incident proves challenging. Such occurrences may vary widely, from potential acts of terrorism to hostage situations to other events that a single department cannot address while operating within its routine organizational structure. Perhaps an exact meaning depends on the situation and its context. Nonetheless, drawing from similar definitions of a national emergency, a critical incident or crisis may be characterized as an event, such as a "natural disaster, technological failure, or other emergency that seriously degrades or threatens the safety and security of an individual, a community, or the nation."<sup>5</sup>

On a national scale, Presidential Policy Directives (PPDs) also assist in defining the parameters of a critical incident by focusing on governmental responses to threats that pose the greatest risk to the security of the country.<sup>6</sup> On a local level, a crisis or critical incident could be defined most aptly as "deployment of resources to manage an immediate threat requiring multidisciplinary emergency-services responses. These events often result from a natural disaster, major accident, or significant criminal action

requiring rapid responses.”<sup>7</sup>

Some situations become critical incidents due to either the loss or potential loss of life or because of the rarity of the offense for a given community. Regardless of the crisis’ nature, local law enforcement often responds before other emergency services and almost always serves as the first responder relied upon to initiate incident command and take the first steps to resolve the situation.

The authors describe an interagency response as one involving an incident requiring more than two agencies and disciplines (e.g., local police and FBI, local police and EMS) to respond. Additionally, specialty teams typically consist of a group of officers who have received advanced training in positions (e.g., SWAT members, negotiators, crisis managers, evidence-response personnel, and behavioral-analysis experts) related to crisis response. National assets, such as the FBI’s Hostage Rescue Team (HRT) and other entities, generally deploy in situations that require law enforcement action and may have a nexus with national security or other need for federal assistance.<sup>8</sup>

## **Dynamics**

Despite a plethora of literature and practical guidance relative to fostering leadership in diverse enterprises (e.g., military, business, finance, or medicine), not many published research reports and analyses exist pertaining to police leadership during critical incidents.<sup>9</sup> Even fewer focus on large-scale incidents requiring interagency responses, multiple specialty teams, or the potential deployment of national assets. Therefore, police leaders often rely on anecdotal descriptions and lessons learned from previous incidents to inform law enforcement practice.<sup>10</sup>

The escalating frequency of critical incidents presents particular challenges for police leaders. One expert asserted that “the chaos of the times seems to present a new disaster every week, plunging leaders who may be top-notch performers under normal operations into a world of chaos....”<sup>11</sup> While experts may debate the rate of such occurrences, the need for law enforcement responses to crisis situations and the leadership required to effectively and efficiently manage such incidents require further examination.<sup>12</sup>

Law enforcement officers face difficult time constraints. In practice, the length of time necessary to transition at the scene from the initial period of chaos to effective crisis management depends somewhat upon decisions made by the first few police officers responding. This transition holds significance because chaos during critical incidents often hampers care rendered to victims by emergency services, exacerbates inaccurate reporting by the media, and exposes first responders to unnecessary risk. Anecdotally, the deployment of leadership experienced in crisis management can support this transition.

In crisis situations, leaders often must manage resources in a location they did not choose, quickly diagnose problems on less than complete information, and make critical decisions that may send subordinates in harm’s way. However, many factors can compromise or impair the ability to do so. If clear leadership lacks in these situations, the strongest-

willed (and not necessarily the most experienced) individuals often prevail.<sup>13</sup>

Like other professions, law enforcement agencies provide training and resources to building leaders within their organizations. Yet, when considering the dynamics of critical-incident response, law enforcement—similar to other industries—often experiences challenges when agency personnel must leverage and adapt their leadership skills to meet these unique demands.

## **LEADERSHIP CONTEXTS**

### **Everyday Operations**

Organizations outside of law enforcement also place value on identifying, recruiting, training, and retaining effective leaders. For example, many businesses, academic institutions, and government agencies, as well as the military, have adopted internal and external leadership programs to invest in workforce development at all levels.<sup>14</sup> Such measures sustain and improve current leadership and develop leaders for the future.

Command colleges, training institutes, police academies, and organizations, such as the International Association of Chiefs of Police (IACP) and the Commission on Peace Officer Standards and Training (POST), all promote training and executive-development programs devoted to instilling and cultivating leadership among law enforcement professionals. The FBI established its Leadership Development Program (LDP), which represents an enterprisewide effort to leverage several initiatives to provide state-of-the-art approaches to leadership throughout the agency. Leadership training at the FBI Academy, mentorship relationships, and various leader-evaluation opportunities also achieve this goal. In addition, organizational climate surveys interpreted by industrial psychologists assist individuals to grow into better leaders.

While the results of law enforcement-based leadership-development programs may be difficult to measure, they undoubtedly enhance professionalism and organizational effectiveness by cohesively fostering creativity in the workplace, increasing morale, and building a leader's confidence in day-to-day operational environments. However, the execution of leadership during a crisis differs somewhat from myriad organizational and management issues that commonly arise in everyday administration and oversight of an organization.<sup>15</sup>

This distinction becomes apparent when leaders face a crisis that may present “situations they are both unequipped to handle and also prone to make well-meaning, yet disastrous decisions in the heat of the moment.”<sup>16</sup> While many leaders receive training in leadership principles and practice, the unexpected crisis can impair their ability to execute those skills when responding to such an incident.<sup>17</sup>

Perhaps this occurs for many reasons, including the velocity of unfolding events, lack or overabundance of personnel responding, urgency of the situation, stress and intensity of the crisis, organizational or logistical delays, communication lapses, and inevitable

escalation of interest in outcomes by third parties (e.g., the media). Having many of these forces unfolding simultaneously further challenges leaders in times of crisis. Identification of best practices for leveraging effective leadership during crisis incidents may help to overcome some of these factors.

Several elements may contribute to better outcomes. While not an exhaustive list, at least some of these may center around five areas.

- 1) Law enforcement command-level education specific to leadership in crisis situations proves necessary.
- 2) A transparent and nonattributable after-action process should emphasize improving leadership and decision making. This includes creating an environment whereby the courage to identify and rectify leadership mistakes results in so-called best practices.<sup>18</sup>
- 3) While recently improved via Presidential Policy Directives and frameworks for responding to national-scale disasters, authorities need to address the persistent ambiguity regarding lines of authority and decision-making responsibility.<sup>19</sup>
- 4) Specific training within law enforcement-development programs should focus on what makes on-scene commander leadership and decision making effective.
- 5) Identification of the tenets or precepts of on-scene command can increase the likelihood of effective and positive outcomes to the crisis.

All of these issues require further examination to better understand how to foster, maintain, and enhance leadership throughout crisis-response operations.

### **Other Organizations**

To determine how law enforcement leadership resembles or differs from that in other types of organizations, the most analogous experiences come from the armed services. The military not only equips its personnel to confront conflicts around the world but also constantly prepares for future hostilities through training, research, and analysis of both known and anticipated adversaries. Particular attention focuses on command and control in specific crisis situations or those that require both immediate and long-term action plans for successful outcomes.

Crisis situations on the battlefield bring many challenges that require immediate decisions and actions—many without information needed to arrive at sound judgments.<sup>20</sup> Additionally, in military engagements, many hierarchies and systems govern the response. To this end, all military members—leader or not—follow a rigid rank structure and the Uniform Code of Military Justice and do not have recourse to any command unless it is illegal.<sup>21</sup> This removes at least one hurdle from the exercise of leadership by the military commander.

Although similar to the military in some instances, law enforcement responses during crises do not operate under the same conditions. For example, the military consistently exercises established communication protocols in both training and operations to facilitate effective and efficient responses. Communicating and convincing other agencies and nonpolice personnel concerning the necessity of certain actions can consume valuable time and distract from the exercise of leadership and decision making in the midst of a crisis response. Yet, law enforcement leaders must take such actions and leverage both new and preexisting relationships across local, state, and federal agencies to establish a solid foundation of trust and authority that should be fostered prior to the occurrence of a critical incident.

Leadership during critical incidents, such as natural disasters, in the firefighting and public safety realm also bears similarity to the challenges of leading through crises in law enforcement operations. First responders, such as officers and firefighters, follow the Incident Command System (ICS), which codifies many of the emergency-management precepts in use today and finds its roots in the response to the California wildfires in the late 1960s.<sup>22</sup>

At that time, response efforts experienced numerous interorganizational challenges that required standardized solutions. Subsequent working groups ultimately resulted in the forerunner to the current ICS—FIrefighting REsources of Southern California Organized for Potential Emergencies (FIREScope)—which resulted in more systematic and effective modalities for responding to forest fires.<sup>23</sup> Since that time, both law enforcement and public-safety measures by local, state, and federal partners have evolved into standardized protocols, and an examination of tactics and strategies have improved public-safety responses to these kinds of disasters.

Of course, in this arena life-threatening situations occur more often and commonly involve many of the dynamics experienced by law enforcement. However, some important differences merit noting. In these cases, responders usually know or anticipate the nature of the threat. As such, a specific hazard (e.g., fire, tornado, or hurricane) frames training for specific mitigation or neutralization of the incident.

The all-hazards response often encountered by law enforcement leads to a wider scope of unknown issues at the crisis site. Responders anticipate some, such as those during an active-shooter situation. However, many others may be reticent to developing policy and procedures for execution in the same manner for every call for service. Nonetheless, the crises encountered by law enforcement officers often involve similar threats to life and limb, but due to environmental, social, and even geographic factors, the responses usually require leadership to tailor appropriate actions to the situation at hand.

In law enforcement operations, perhaps the most significant leadership hurdle consists of taking actions to minimize the paralyzing effect that sometimes accompanies chaotic situations. “Freezing up” by first responders and leaders in these roles has occurred and been mitigated via training and repetition.<sup>24</sup>

Often, these first responders, to include a growing number of law enforcement personnel, have experienced “vigilance fatigue.” Perhaps this inertia results from constant pressure to seek out threats and prepare for those that prove difficult to predict.<sup>25</sup> Leaders in this realm must recognize this problem and prevent it from interfering with effective crisis response.

Crisis management presents an ever-present challenge for leaders in many vocations. In the field of medicine, emergency-room and operating-room personnel work in a crisis and high-stress environment daily. Business and industry leaders routinely have internal and external events that demand practiced leadership for their companies to weather the storm. Even the sports-and-entertainment industry faces unique crises and pressures. Law enforcement agencies can draw parallels and learn from proven leaders in all of these fields.

## **LEADERSHIP DURING CRISIS INITIATIVE**

Leadership is a cornerstone of long-term success in all walks of life. As such, law enforcement organizations focus on the need to embrace leadership as a core principle for fostering both current and future effectiveness in accomplishing their goals.

However, an apparent deficit in knowledge exists relative to the nature and type of leadership required during law enforcement responses to crisis situations. To shed light on both the dynamics of effective and ineffective leadership in such situations, a research project has been established to examine the dynamics of leadership and decision making exercised during crisis events. This research involves a review of after-action reports since 2010, proposes interviews with crisis responders and on-scene commanders from a subset of these events, and perhaps may even include future field observation of situations that require FBI assistance.

The methodology continues to evolve and change, mostly due to practical issues. However, preliminary findings from initial reviews of after-action reports have suggested that during critical incidents, leaders must address such principal factors as personnel, communications, and other logistical components surrounding deployment of people and capabilities.<sup>26</sup>

The FBI seeks additional evidence to help on-scene commanders and leaders obtain guidance on the merits of decision making that sometimes becomes necessary in the absence of less than optimal information to support such an action. This proves necessary because in a crisis situation, crucial data often is unavailable, incomplete, ambiguous, or even conflicting.<sup>27</sup>

Other evidence this study strives to attain includes how best to assess the strengths and weaknesses of the intended response and when and how to leverage new partnerships, as well as other dimensions of leadership during crises. While no definitive findings have unearthed yet, this study hopes that these efforts will help fill gaps in knowledge

pertaining to training and practice relative to leadership that may assist law enforcement in effectively responding to crisis situations.

### **A High-Profile Crisis (Sidebar)**

Hurricane Katrina produced widespread human devastation. A modern-world surplus of technological tools should have prepared citizens for such a disaster. Analysis of this catastrophe presents important lessons.

When Katrina struck New Orleans, Louisiana, on August 29, 2005, virtually every meteorologist and public official had underestimated its sheer power. Over 1,800 people died, and a total estimated cost of \$150 billion resulted. The total human cost proved much greater. New Orleans had not faced such a catastrophe since 1823, when a hurricane produced a much-greater tidal rise some 20-feet higher than that of Katrina.

Katrina left New Orleans in complete disarray. Floodwaters washed away thousands of homes, businesses, schools, and cemeteries. Many people raced to save their lives. Some climbed to the roofs of their homes with the desperate hope that police officers or National Guard troops might rescue them. Of course, many corporate crisis-management principles went ignored by the public sector. No single incident commander made decisions; allocated resources; or linked local, state, and federal responders.

Any crisis coach would share many lessons regarding the tragedy that resulted from Katrina. For instance...adequate supplies, such as long-life batteries for laptops and phones, sufficient generators, and IT infrastructure necessary to operate at a functional level, were unavailable. Lack of thought also was evident regarding where victims, including employees, guests, customers, and others, would relocate when the catastrophe struck. And, authorities did not plan for the vulnerability of security and police teams in the aftermath of such a disaster.

The basic needs of responding organizations went unmet. Communications systems—including landline phones, cell phones, and e-mail—were inoperable. Contingency decision making was not employed. Previous knowledge of the inadequacies of the Louisiana Superdome for triage existed since perhaps 1998, but no one made a better plan. No single voice in this disastrous situation ever emerged... One of the chief lessons learned? Readiness matters.

*Source: Laurence Barton, Crisis Leadership Now: A Real-World Guide to Preparing for Threats, Disaster, Sabotage, and Scandal, 1st ed. (New York, NY: McGraw-Hill Education, 2008), 123-135*

### **CONCLUSION**

Every realm of life—public and private—needs effective leadership. Limited knowledge exists regarding its exercise in crisis situations, and many people assume that simply applying day-to-day leadership protocols to such events will suffice. However, as demonstrated, law enforcement crisis responses differ from those in other realms. The

nature and scope of leadership required to effectively respond to crises may, in fact, be different in the confusion of these situations.

This research project aims to take advantage of the opportunity to further enhance performance in crisis situations. If successful, perhaps authorities can validate some of what is known from experiential and case data, derive new tools for collecting and analyzing past cases for current and future intelligence, and, ultimately, provide for improved leadership during crisis situations that emerge all too frequently.

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*The authors benefited from comments and suggestions from various individuals, especially U.S. Air Force Major Nelson Prouty, who provided important insights from a military perspective.*

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## Endnotes

<sup>1</sup> U.S. Department of Justice, Federal Bureau of Investigation, and Texas State University, *A Study of Active Shooter Incidents in the United States Between 2000 and 2013*, J. Pete Blair and Katherine Schweit, 2013, accessed March 28, 2016, <https://www.fbi.gov/about-us/office-of-partner-engagement/active-shooter-incidents/a-study-of-active-shooter-incidents-in-the-u.s.-2000-2013>.

<sup>2</sup> Daniel Howden, "Terror in Nairobi: The Full Story Behind al-Shabaab's Mall Attack," *The Guardian*, October 4, 2013, accessed March 28, 2016, <http://www.theguardian.com/world/2013/oct/04/westgate-mall-attacks-kenya?view=mobile>.

<sup>3</sup> Supervisory Special Agent Michael McCluskey of the FBI's Crisis Management Unit, personal communication with authors, March 4, 2016.

<sup>4</sup> James P. Derrane, "A Study of Incident Command Leadership Styles" (PhD diss., Cappella University, 2013), accessed March 28, 2016, <http://gradworks.umi.com/36/05/3605113.html>.

<sup>5</sup> For specific verbiage and more-detailed information pertinent to national-scale crisis situations, see Exec. Order No. 12656 (November 1988), as well as subsequent legislative and executive actions. Contact the FBI's Crisis Management Unit at 703-632-4400 for additional inquiries relative to the dynamics of national-scale emergency responses.

<sup>6</sup> "Presidential Policy Directives (PPDs), Barack Obama Administration," Federation of American Scientists, accessed April 19, 2016, <http://fas.org/irp/offdocs/ppd/>.

<sup>7</sup> Irene Barath, "Strategic Leadership During Crisis," *FBI Law Enforcement Bulletin*, June 2013, accessed March 28, 2016, <https://leb.fbi.gov/2013/june/leadership-spotlight-strategic-leadership-during-crisis>.

<sup>8</sup> Various frameworks, such as Presidential Policy Directives, the Incident Command System (ICS), and the National Incident Management Strategy (NIMS) typically manage such national-asset deployment. These resources provide important guidelines for jurisdictional and legal requirements that govern such situations. For an analysis of how



leadership styles perform in this framework, see Derrane.

<sup>9</sup> Kim S. Cameron, Robert E. Quinn, Jeff Degraff, and Anjan V. Thakor, *Competing Values Leadership*, 1st ed. (Northampton, MA: Edward Elgar Publishing, 2006). Also, see for example Derrane; Aden Hogan, Jr., “Managing the Unthinkable,” *Public Management* 93, no. 5 (2011): 12-14, accessed April 19, 2016, <http://webapps.icma.org/pm/9305/public/feature1.cfm?title=Managing%20the%20Unthinkable&subtitle=&author=Aden%20Hogan>; and William L. Waugh, Jr., and Gregory Streib, “Collaboration and Leadership for Effective Emergency Management,” abstract, *Public Administration Review* 66, Supplement S1 (December 2006): 131-40, accessed March 28, 2016, <http://onlinelibrary.wiley.com/doi/10.1111/j.1540-6210.2006.00673.x/abstract;jsessionid=AFC4C8A2F3C9BAE34363B11CE2662F2F.f04t03>.

<sup>10</sup> The Police Response to Active Shooter Incidents, Critical Issues in Policing Series (Washington, DC: Police Executive Research Forum, March 2014), 1-2, accessed April 5, 2016, [http://www.policeforum.org/assets/docs/Critical\\_Issues\\_Series/the%20police%20response%20to%20active%20shooter%20incidents%202014.pdf](http://www.policeforum.org/assets/docs/Critical_Issues_Series/the%20police%20response%20to%20active%20shooter%20incidents%202014.pdf).

<sup>11</sup> Gordon Meriwether, “Leadership in Crisis,” *The Leadership Challenge*, accessed April 5, 2016, <http://www.leadershipchallenge.com/resource/leadership-in-crisis.aspx>.

<sup>12</sup> Laurence Barton, *Crisis Leadership Now: A Real-World Guide to Preparing for Threats, Disaster, Sabotage, and Scandal* (New York, NY: McGraw-Hill Education, 2008).

<sup>13</sup> For more details on this and other biases in decision making, see Katherine Hibbs Pherson and Randolph H. Pherson, *Critical Thinking for Strategic Intelligence* (Los Angeles, CA: Sage Publishing, 2012); and for discussions of occurrences in military settings, see Justin D. Rueb, Holly J. Erskine, and Roseanne J. Foti, “Intelligence, Dominance, Masculinity, and Self-Monitoring: Predicting Leadership Emergence in a Military Setting,” *Military Psychology* 20, no. 4 (October 2008), accessed April 5, 2016, [https://www.researchgate.net/publication/232981875\\_Intelligence\\_Dominance\\_Masculinity\\_and\\_Self-Monitoring\\_Predicting\\_Leadership\\_Emergence\\_in\\_a\\_Military\\_Setting](https://www.researchgate.net/publication/232981875_Intelligence_Dominance_Masculinity_and_Self-Monitoring_Predicting_Leadership_Emergence_in_a_Military_Setting).

<sup>14</sup> For multiple sources of how Fortune 500 companies, universities, and government agencies implement and sustain leadership-development opportunities and link such efforts to overall success, see The Human Resources Social Network, accessed April 5, 2016, <http://www.hr.com/>.

<sup>15</sup> Derrane; and Barton.

<sup>16</sup> Meriwether.

<sup>17</sup> Barton.

<sup>18</sup> U.S. Department of Justice, Office of Justice Programs, National Institute of Justice, *Mending Justice: Sentinel Event Reviews*, NCJ 247141, September 2014, accessed April 5, 2016, <https://www.ncjrs.gov/pdffiles1/nij/247141.pdf>. Although this monograph may present some perspectives different from this article, it provides insight as to how incident-review processes may benefit both public safety and organizational effectiveness.

<sup>19</sup> “Presidential Policy Directives (PPDs), Barack Obama Administration.”

<sup>20</sup> Ground Combat Operations MCWP3-1 (formerly FMFM 6) Commanding General C.E. Wilhem, U.S. Marine Corps, Combat Development Command, Quantico, Virginia,

interview by author, 2002. See also Charles “Sid” Heal, *Sound Doctrine: A Tactical Primer* (New York, NY: Lantern Books, 2000) for law enforcement-specific applications. Additional similarities between military and policing leadership challenges can be found in Society of Police Futurists International and Federal Bureau of Investigation, Futures Working Group, *The Police and the Military: Future Challenges and Opportunities in Public Safety*, ed. Mary O’Dea and John Jarvis, Vol. 4: Proceedings of the Futures Working Group, December 2008, accessed April 5, 2016, <http://futuresworkinggroup.cos.ucf.edu/docs/Volume%204/index.php>.

<sup>21</sup> UCMJ, 64 Stat. 109, 10 U.S.C. § 47, The Uniform Code of Military Justice, accessed April 5, 2016, <http://www.ucmj.us/>.

<sup>22</sup> U.S. Department of Homeland Security, Federal Emergency Management Agency, “Incident Command System Resources,” last updated March 19, 2015, accessed April 5, 2016, <https://www.fema.gov/incident-command-system-resources>.

<sup>23</sup> See Jessica Jensen and William L. Waugh, Jr., “The United States’ Experience with the Incident Command System: What We Think We Know and What We Need to Know More About,” abstract, *Journal of Contingencies and Crisis Management* 22, no. 1 (March 2014), accessed April 6, 2016, <http://onlinelibrary.wiley.com/doi/10.1111/1468-5973.12034/abstract>.

<sup>24</sup> This phenomenon has a long history and continues as an area of research and analysis in biology and stress-management literature. The notion of a fight-or-flight response finds its origins in Walter B. Cannon, *Bodily Changes in Pain, Hunger, Fear, and Rage* (New York, NY: D. Appleton and Company, 1920), accessed April 19, 2016, <https://archive.org/details/bodilychangesinp029647mbp>.

<sup>25</sup> Meredith Krause, “Vigilance Fatigue in Policing: A Critical Threat to Public Safety and Officer Well-Being,” *FBI Law Enforcement Bulletin*, December 2012, accessed April 6, 2016, <https://leb.fbi.gov/2012/december/vigilance-fatigue-in-policing-a-critical-threat-to-public-safety-and-officer-well-being>.

<sup>26</sup> Applying analytics to data gathered from after-action reports also may provide useful insights and operational direction on this topic. However, existing after-action report data currently is not conducive to such analysis.

<sup>27</sup> For elaboration on this important observation pertaining to accurate intelligence in critical tactical decision making, see Heal, *Sound Doctrine*.

# Investigative Tactics and Procedures as a Theoretical Perspective in Homicide Clearance<sup>1</sup>

**Jesenia M. Pizarro<sup>2</sup>, William Terrill<sup>3</sup>, & Charles A. LoFaso<sup>4</sup>**

Apprehending homicide offenders, and clearing these cases, is of paramount importance to the police and society. Nationally, clearance rates have declined from the 90 percent range in the early 1960s to the 60 percent range presently (Braga & Dusseault, 2018). Studies that have examined clearance often do so from the theoretical lens of *victim devaluation* and *event characteristics*, and more recently by employing neighborhood processes to measure *police devaluation*, as well as *victim lifestyle* explanations. While these theoretical perspectives have contributed to the literature, the examination of investigatory policies as they relate to homicide clearance is comparatively rare. The present study seeks to fill this void by examining the effect of investigatory strategies and procedures, implemented by the Rochester Police Department (RPD) in 2012, on clearance. More specifically, this study examines whether changes made to the investigation procedures and protocols within RPD's homicide unit have an effect on homicide clearance net of theoretically significant variables that tap into victim devaluation, event characteristics, police devaluation, and victim lifestyle. Based on prior research it is hypothesized that investigation tactics will affect the odds of clearance, even after controlling for other theoretically relevant variables.

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<sup>1</sup> Tables and References are available upon request.

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## Methodology

The current study centers on 132 homicides investigated by the RPD's Homicide Unit over four-years consisting of the pre-intervention period (January 1, 2010 and December 31, 2011) and post-intervention period (January 1, 2013 and December 31, 2014). Specifically, post 2012 The Rochester Homicide Unit increased staffing and management oversight, and become more efficient in their assignment of tasks immediately after homicides were reported due to their addition of a mobile command unit. This study is one of the few that simultaneously examines the robustness of the four clearance explanations explored in the literature. It is also one of the few quasi-experiments examining the effect of investigation tactics on clearance with a pre- and post-intervention time.

Data were obtained directly from RPD's homicide files compiled by the investigators assigned to the case. Data collected include variables associated with clearance in the literature (Puckett & Lundman, 2003; Riedel, 2008; Rydberg & Pizarro, 2014), including investigator related measures (e.g., investigator experience, caseload), event characteristics (e.g., weapon used, mode, witnesses, inside/outside residence), victim characteristics (e.g., gender, race, age, lifestyle, and criminal history), and neighborhood characteristics (income level, race).

**Dependent Variables.** Two dependent measures of homicide clearance are used. The first, *clearance*, measures whether the case was cleared by arrest. RPD detectives consider a case closed once a suspect is arrested, even if they anticipate making further arrests. The second, *time to clearance*, captures the amount of time between the date on which the investigation began and the date on which the first arrest was made. Since open

cases did not have a time to clearance they were right censored in order to avoid missing data on this variable.

**Independent Variables.** The independent variable of interest is post-2012 investigation tactics and procedures. This intervention variable captures as a whole the investigation tactics and procedures adopted by MCU in 2013 and utilized throughout the remainder of the study period (1=post-investigation, 0=pre-intervention ). The remaining independent variables consist of investigator, victim, event, and neighborhood variables. Investigator variables capture years of experience and number of open cases. Victim devaluation and lifestyle variables include gender, race, age, and deviant lifestyle. Event variables focus on incident-level situational factors and include weapon, mode, whether witnesses participated in the investigation, and incident location. Finally, neighborhood variables tap into the incident location's census tract income and racial/ethnic diversity.

### **Findings**

Of the 132 homicide incidents, 68% were cleared by an arrest during the study period. When examining pre- and post-intervention clearance specifically, 54% of incidents were cleared pre-intervention, while 83% were cleared post-intervention. Although over half of the cases were cleared within 7 days, on average homicide incidents were cleared within 57 days as the average days to clearance is affected by the presence of various incidents that took over a year to clear. Similar to the examination of pre- and post-specific clearance, time to clearance also varies pre- and post-intervention. On average investigators cleared a case within 75 days pre-intervention, and 44 days post-intervention.

Two sets of multivariate analyses were undertaken. The first examines if the change in investigation tactics had an effect on whether incidents were cleared with an arrest or not. Due to the dichotomous nature of the dependent measure, logistic regression was employed to identify the covariates that differentiate cleared cases versus those that were not. The second examines changes in time to clearance pre- and post-intervention. In addressing time to clearance, a Cox proportional hazard model was utilized.

The logistic regression findings show that changes in investigation tactics post-intervention have a positive effect on departmental homicide clearance, with rates increasing post-intervention. Several control variables were also significant in the predicted direction. Specifically, a greater number of investigator open cases decreased the likely of clearance, as did cases involving victims with a deviant lifestyle. Conversely, incidents involving face-to-face homicides and where at least one witness gave a statement to police were more likely to be cleared. Interestingly, investigator years of experience had an inverse relationship with clearance, whereas more experienced investigators were less likely to clear cases.

Similar to the logistic analyses, the Cox proportional hazard models examining the effect of the intervention on time to clearance show positive results. Cases post-intervention take significantly less time to clear ( $p < .01$ ). Similar to the logistic models, neighborhood processes that tapped into police devaluation are not significant. Additionally, time to clearance is not affected by the investigator variables that tapped into experience and number of open cases. Consistent with prior research, homicides carried out with non-firearms were cleared faster, as were those where there was at least one witness. Conversely, homicides of 15 to 44 year olds took longer to clear than those

of other ages. The final significant measure is in the non-predicted direction, in that victims enmeshed in criminal lifestyles were cleared faster than those of victims not involved in deviant and criminal activities (table available upon request).

### **Conclusion**

The findings show that investigation tactics matter in clearance. Following the changes made by RPD (increase staffing, increase oversight, and prioritizing task assignments during first response), homicide clearance rates increased, and the number of investigation days decreased. These findings support previous research that show adequate staffing with competent, well-trained investigators, proper oversight by management, and the immediacy in which tasks are distributed, are important covariates in homicide clearance. This study also joins prior works that show event characteristics are indeed important. Homicides carried out in a face-to-face manner, and those not involving firearms were more likely to be cleared, and cleared faster. This speaks to the possibility that these cases are easier to investigate given the presence of physical evidence. Relatedly, the findings also support prior research showing witness cooperation in the form of providing statements to the police about the incident also has a significant effect on the clearance of cases; hence, tactics that foster these practices have the potential to be helpful.

In conclusion, this study suggests that the victim devaluation, event, lifestyle, and police devaluation theoretical perspectives do not offer the only valid explanations to the phenomena of clearance. While important, these perspectives do not take into account the dynamic nature of police work and how the police go about investigating homicides, which is an important piece of the clearance framework. The findings show that homicide

clearance is complex, involving multiple dynamics which may leave a case open on an agency's books, or culminate in the apprehension of a murder suspect. As a result, in order to gain a more complete understanding of homicide investigation outcomes, future studies should consider multiple theoretical frameworks.



**Examining Police Responses to Homicide:  
The Promise of Multifaceted Data Collection Approaches**  
S.R. Hawk, Applied Research Services (ARS)

**Introduction**

It is hypothesized that heightened access to homicide investigators allows for more thorough and comprehensive data necessary to advance clearance research. When relying on agency-released data, researchers have limited access to a predefined set of measures and issues of missing data. Problems can extend to even comprehensive archival datasets assembled directly from official case files, as they generally lack some key information among open cases and primarily focused on details about the involved subjects and event circumstances, because official homicide files are generally truncated and sterilized prosecution-oriented documents — not complete chronicles of the investigation process. The reliance on archival data has resulted in gaps in the inclusion of key measures, the use of proxies, and partial reliability. In an effort to examine if these concerns could be overcome through a multimethod data-collection design, the current study compares homicide case file data to those augmented through investigator interviews. To our knowledge, no clearance study has used such a design to verify and extend police record data.

**Data & Analyses**

This study focuses on homicide investigations in one large urban jurisdiction from 2009 to 2011 (n1=252 cases). Data were pulled from police records (case files and internal databases), the state's electronic criminal history repository, the U.S. Census (n2 = 91 tracts), and investigation interviews (n3=29 detectives). Two sets of analyses were conducted. First, the red-pen exercise highlighted the extent to which original archival

data can change by interviewing detectives. A red pen was used to correct or add to data templates completed during case file reviews, and then the changes were tallied.

Examination of the changes among a subset of inactive cases provided insight to the data

**Table 1. Pre to Post Interview Homicide Case Data Comparison**

	Corrections to Cases	Additions to Cases	Inactive Case Changes
<i>Involved Subjects</i>	N = 2,199	N = 2,256	N = 1,343
Involvement Type	9%	11%	4%
Subject Age	2%	14%	17%
Subject Race	2%	19%	13%
Subject Sex	3%	4%	2%
<i>Event Circumstances</i>	N = 252	N = 252	N = 159
Location	1%	26%	16%
V/S Relationship	29%	54%	54%
V/S History Confrontation	38%	43%	40%
V/S Prior History as Contributor	33%	36%	36%
Who Initiated Incident	37%	46%	60%
Social Circumstances	11%	42%	42%
Motive	18%	41%	40%
<i>Case Dynamics</i>	N = 252	N = 252	N = 159
Evidence Collected	5%	44%	45%
Evidence Processed	3%	46%	55%
Evidence of Value	4%	54%	56%
Drug Locale	40%	42%	41%
Gang Locale	10%	69%	62%

developments among homicides that were not subject to ongoing investigative efforts. Second, multivariate analyses showed the difference in research results before and after the data were verified,

updated, and extended.

## Findings

The red-pen exercise findings are shown in Table 1. The data changes show official homicide case files reviewed in this study were not sufficient as a single source of investigation outcomes data. The interviews led to a significant amount of corrections and additions to key measures. The alterations in the inactive investigations, further supports the notion that the official files are cleaned, “just the facts ma’am” court-ready documents. This suggests that even having unfettered access to full homicide case files is still likely to lead to incomplete and inaccurate data.

The extent to which the data were changed is further exemplified by the descriptive statistics shown in Table 2. Fourteen cases’ statuses were changed from either

open to closed or closed to open after the interviews, which increased the percentage of clearances to 69%. After data alterations, the opposite sexes measures showed fewer homogeneous sexes than originally coded. Offenders were younger and chronic offending was less prevalent than originally inferred. More victim and offenders had legitimate relationships and homicides involving street-crime motives<sup>5</sup> were higher than case files reviews suggested. After consulting with detectives, it was clear that a weapons measure could not be modeled as the involvement of firearms nearly saturated the sample. The distributions of the measures in the case dynamics domain all changed, primarily reducing the false negatives. The presence of evidence increased and although it may seem inherent that police frequented area data would be improved through talking to the police, even the location measures (i.e., indoors) changed. Ecological characteristics are not commonly included in single-site clearance studies yet impact investigations. Lastly, detectives had more cases closed per year than previously calculated but the count of their cases was reasonably stable.

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<sup>5</sup> The investigators in this study clarified about two-thirds of the unknown motives.

**Table 2. Descriptive Statistics**

Variables	Min	Max	Case File Data			Investigations Data		
			N	Mean/%	S.D.	N	Mean/%	S.D.
Closed Cases	0	1	252	67%	0.47	252	69%	0.47
<i>Involved Subjects</i>								
Male Victim	0	1	252	82%	0.39	252	82%	0.39
Victim/Suspect Opposite Sexes	0	1	222	23%	0.45	252	27%	0.44
Victim 25 Yrs or Older	0	1	252	72%	0.45	252	72%	0.45
Suspect 25 Yrs or Older	0	1	197	48%	0.49	204	62%	0.49
Suspect More than 5 Prior Arrests	0	1	177	49%	0.50	252	40%	0.49
<i>Event Circumstances</i>								
Known Legitimate V/S Relationship	0	1	252	33%	0.47	252	40%	0.49
Unknown Motive	0	1	252	24%	0.43	252	7%	0.25
Street-crime Motive	0	1	252	39%	0.49	252	49%	0.50
Evening-Early Morning (9pm -	0	1	252	54%	0.50	252	54%	0.50
Gun Involved	0	1	252	80%	0.40	252	96%	0.20
<i>Case Dynamics</i>								
Evidence Types Processed (count)	0/1	4	252	2.71	1.05	252	2.92	0.88
Significant Verbal Evidence	0	1	252	90%	0.30	252	86%	0.35
Weapons-related Evidence	0	1	252	68%	0.47	252	77%	0.42
Technological Evidence	0	1	252	62%	0.49	252	67%	0.47
Biological Evidence	0	1	252	52%	0.50	252	62%	0.49
Police-Frequented Area	0	1	252	34%	0.47	252	40%	0.49
Indoor Location/Crime Scene	0	1	244	36%	0.48	252	38%	0.49
<i>Ecological Characteristics</i>								
% High School Educated	57	100	252	80%	9.33	252	80%	9.33
(Ln)Density (population/sq. miles)	6	10	252	8.19	0.66	252	8.19	0.66
Impoverished (income/avg. family)	0	1	252	42%	0.49	252	42%	0.49
<i>Investigator Factors</i>								
Total Open Cases	0	9	252	4.05	1.94	252	2.79	1.85
# Open Cases Each Year	0	4	252	1.81	1.28	252	1.65	1.14
# Cases Before New Case	0	18	252	5.82	4.67	252	5.83	4.66

The results of examining how these measures co-vary on case outcomes are shown in Table 3. The dependent variable was case resolution (open = 0, closed = 1). These models were compared to explore how findings might change based on data source and accuracy. Model building using *Case File Data* resulted in the first set of results, wherein three of the eight predictor variables. The most impactful measure in the model was victim/offender relationship; followed by unknown motive and how many open cases the detective had that year. Measures suitable to regress on clearances changed using the investigations dataset for model building.

**Table 3. Logistic Regressions**

Variables	Case File Data <sup>6</sup>			Investigations Data <sup>7</sup>			Case File Data <sup>8</sup>			
	Built Model			Final Model			Replicated Final Model			
	B	se	OR	B	se	OR	B	se	OR	
Constant	-0.324	3.189	1.382	-3.698	4.179	0.025	1.636	3.386	5.134	
<i>Involved Subjects</i>										
Victim/Suspect Different Sex				-0.258	0.609	0.773	-0.283	0.640	0.753	
Male Victim	0.020	0.576	1.219							
Victim 25 Years or Older	-0.402	0.403	0.669	-1.287**	0.586	0.276	-0.747	0.477	0.474	
Suspect More than 5 Arrests				1.877***	0.434	6.536	0.803***	0.298	2.232	
<i>Event Circumstances</i>										
Legitimate Relationship	2.422***	0.700	11.268	1.835***	0.536	6.264	2.472***	0.615	11.845	
Unknown Motive	-1.958***	0.383	0.141							
Street-crime Motive				-1.190**	0.477	0.304	0.196	0.366	1.217	
Evening/Morning Hours				-0.615*	0.362	0.541	-0.293	0.283	0.746	
<i>Case Dynamics</i>										
Evidence Types				0.768***	0.218	2.154	0.185	0.210	1.203	
Weapons Evidence	0.502	0.363	1.652							
Police-frequented Area				0.834**	0.409	2.302	0.577	0.419	1.800	
Indoor Crime Scene	0.403	0.534	1.496	0.580	0.441	1.786	0.467	0.553	1.595	
<i>Ecological Characteristics</i>										
Density	0.270	0.354	1.310	1.073***	0.354	2.925	0.399	0.270	1.490	
% High School Educated				-0.050*	0.028	0.951	-0.037	0.025	0.964	
Poverty				-0.232	0.378	0.793	-0.310	0.291	0.734	
<i>Investigator Factors</i>										
# Open Cases Each Year	-1.070***	0.090	0.343	-0.871***	0.215	0.419	-1.050***	0.818	0.350	
# Cases Before New Case				-0.206	0.136	0.814	0.009	0.344	1.009	
***p ≤ .01; **p ≤ .05; *p ≤ 0.10										
			R <sup>2</sup> = 39%				R <sup>2</sup> = 42%			
			(N = 243)				(N = 250)			
							R <sup>2</sup> = 33%			
							(N = 243)			

After correcting and expanding the data, not only could more cases be modeled with the *Investigations Data*, but more measures from the existent literature could be included (14 independent variables) and the variance explained was increased. The measures were also expanded to be more informative based on investigator feedback and 10 of those variables were significant predictors of case outcomes. Cases were more often closed when victims were under 25 years old, the incident motive was not street-crime related, and the incident occurred during the mid-day hours. The odds of a case being closed were significantly higher if it involved a suspect with more than five arrest cycles

<sup>6</sup> This model represents what would have been reported using only original archival data.

<sup>7</sup> This model is result of modeling the verified and expanded data.

<sup>8</sup> This model is a duplication of the final dataset model using the only the case file data.

and legitimate relationship with the victim. Analyses of the investigations data also revealed that case dynamics and ecological measures are important: clearances were higher with more evidence types, increased police familiarity with an area, area density, and fewer high-school-educated residents. Lastly, the total number of open cases a detective had each year reduced the likelihood they would solve a case. To examine the integrity of the data, this model was replicated with the case file dataset.

Comparing the original and augmented dataset results (*Case File Data – Replicated Final Model*), it is generally notable the case count was again reduced due to missing data, the variance explained dropped, and there were fewer significant measures - seven. Homicides that involve legitimate victim/offender relationships, suspects with more than five arrests, and investigators with fewer open cases have the greatest likelihood of being solved. This dataset suggest case closure is only related to measures in the involved subjects, event circumstances, and investigator factors domains, excluding the role of case dynamics and ecological characteristics.

### **Conclusion**

This study explored a potential source of inconsistencies found in previous research findings – limited access to robust sources of homicide investigation data. The findings here indicated that data collected from the official homicide case files changed quite a bit after discussing the investigation with the lead detectives and those changes significantly altered research findings. Conducting the follow-up interviews with the homicide investigators significantly reduced the amount of missing data (random and systematic) present in this study compared to the original dataset that was based solely upon case file reviews. Anything not listed in the file is assumed to have not been

collected during the investigation. However, the interview additions to the coded templates in the current study call this assumption into question.

Importantly, this study finds that missing data in the case files often results from homicide detectives purposely omitting investigation details from the official record. The detectives in this study commonly used a working file to bring together case leads until they amassed the details needed to officially and fully document a convincing story that justified an arrest warrant. The detectives claim that they do this because the process of documenting can be extremely time consuming and they know the official case file is subject to meticulous scrutiny in court proceedings that ultimately dictate the outcome of the inquiry. The fact that additional data were collected on the investigations closed before the study began supports the assertion that the detectives only use arrest and prosecution relevant information to shape the official records.

If this study had only used homicide case file data, the accuracy of the findings would have been hindered due to the differences in data coding and missing. In part, a key advantage of the study was that it was designed to allow for the passage of time between the initial and follow-up data collection efforts. This afforded the research team the opportunity to capture more information than is typically available in agency released datasets that are rarely updated past one or two years.

Overall, the present study provides important food for thought regarding the data used to examine homicide case closure and may suggest that understanding investigations requires modeling that is more multifaceted. Caution should also be used when trying to compare this study to other research because the data could have been compromised by the fact that it relies heavily on the perceptions of investigators. This study should be

framed within the larger literature and not viewed as a single, authoritative source of homicide investigation outcome findings.



## Psychics, traditional forensics, social media... Tools and methods used by homicide detectives

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In popular culture homicide detectives often tend to solve hard cases by using their intuition, luck or even supernatural powers such as for example clairvoyant visions. On the other end of that fiction spectrum is the idea of detectives having Star Trek alike equipment allowing them to secure and process the scene in couple of minutes without missing any trace and after googling in special data bases identify the perpetrator(s).

The reality of meticulous detective work consisting of hours spend on canvassing, interviewing, paper work, forensic examinations would be very hard to sell. But the question remains what is the most popular way vs what is the most effective way to solve the homicide case, and if there is any silver bullet that could address the complicated social reality.

The paper will present and discuss the results of the parallel studies on homicide investigations that took place in United States (2014-2016) and in Poland (2012-2018).

# Building Big Data to Measure Legal Bias in Homicide Sentencing

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HRWG Extended Abstract

## Executive Summary

This work focuses on using computational methods to develop quantitative measures of racial and prosecutorial bias in Florida homicide sentencing outcomes. Using a sample of 43,459 Florida homicide cases from 1976-2016 I will extend the current legal racial bias literature by including prosecutor and defense attorney characteristics. In addition, I will use multi-faceted measures of offender race (reported race, photo identification, carceral classification, ethnicity, language, and country of origin) to create a more nuanced analysis than currently exists. Using my own experimental text analysis methods I am also able to combine internet-scraped victim data with offender data, creating even more potential for analysis of dyadic bias in the legal system. The end result of this computational process is a large dataset with more complete temporal characteristics, socio-demographic characteristics, and external coverage and accountability variables than any current criminal justice dataset. At the annual meeting I will share the preliminary results of this analysis, focusing on measuring sentencing disparity among homicide dyads.

## Context

Judges are often recognized as key decision makers in court with the power to heavily influence the outcome and processes of cases.<sup>9</sup> Another important player in the story of court bias are prosecutors. While it true that judges wield a lot of discretion, over 95% of federal cases are actually decided via plea bargaining, which is squarely in the prosecutorial domain.<sup>10</sup> As Barkow explains this means that prosecutors “have almost unlimited and unreviewable power to select the charges that will be brought against defendants.” Both of these sources of potential bias are particularly concerning when

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<sup>9</sup> Nugent, Donald C. "Judicial Bias." *Clev. St. L. Rev.* 42 (1994): 1.

<sup>10</sup> Barkow, Rachel E. "Prosecutorial Administration: Prosecutor Bias and the Department of Justice." *Va. L. Rev.* 99 (2013): 271.

dealing with high level crimes that lead to long-term incarceration or death. Zeisel<sup>11</sup> demonstrated that across such crimes in Florida there are highly detectable rates of racial bias in sentencing. While some qualitative and small-medium N evidence of this is available, to my knowledge, there is yet to be a large modern systemic study of these issues.

Studies of legal bias are particularly relevant to homicide crimes, though the methods described here can be broadly applied across all crime types. Homicide crimes have three particular points of interest in this endeavor 1) they are dyadic, allowing for nuanced interacted bias measures 2) they are sensationalized, situating them as salient in the American context and 3) even if homicide data is ‘bad’ it has big impacts. This third point is of particular importance. In the literature more broadly homicide is perceived as “...by far the most unbiased measure of violent crime.”<sup>12</sup> If our gold standard is not so shiny, this can help contextualize the systemic problems inherent to crime data.

### **Building Big Data**

In an ideal world, I would not have to build my data at all. However, crime data is incomplete, inaccurate, and difficult to interpret.<sup>13</sup> Beyond the problem of missingness, different sources of crime data are difficult to combine together. There is no set of connectable data that include the full set of features I need for this analysis. First, I require deep information about an offenders’ socio-demographics, previous criminal history, and sentencing outcomes. This information must be combined with case-level variables like the names of specific judges, prosecutors, and defense attorneys. I also want some external variables like newsworthiness (i.e. news coverage) to proxy for the societal salience of a particular crime. If this data challenge was not enough, in order to more thoroughly study dyadic bias relationships I also need the same collection of variables as they pertain to victims. Unfortunately, victim data is seldom curated in an identifiable fashion that is easily merged onto offender data. The final problem with this data is that it is BIG. The data is not big in the same way that an astronomical simulation

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<sup>11</sup> Zeisel, Hans. "Race bias in the administration of the death penalty: The Florida experience." *Harvard Law Review* 95.2 (1981): 456-468.

<sup>12</sup> Weaver, Vesla M. 2007. "Frontlash: Race and the Development of Punitive Crime Policy." *Studies in American Political Development* 21(2):230-265.

<sup>13</sup> Maltz, Michael D. 1999. *Bridging Gaps in Police Crime Data*. DIANE Publishing.

is big, rather it is the breadth and location of the individual pieces of information that must be compiled together that presents a big data problem.

### *Offender Data*

My data build of the offender-level data begins with Florida Felony Court Processing Data, approximately 12 million total records spanning from 1976-2016. After a year of careful data cleaning, I was able to extract 62,661 homicide records for this analysis. This includes cases where a homicide charge was levied at any time (initial charge, filed charge, sentencing charge). This gave me a list of homicides and corresponding court docket id numbers that can be used to uniquely identify cases. Next, my research team computationally scraped and downloaded full court records for each homicide case. I was able to match the court records to my Felony Processing data using the court docket id number as a linking variable. My third source of data comes from the Florida Department of Corrections where I scrape a complete list of inmates convicted of a homicide in the state of Florida. Using fuzzy matching techniques I am able to match this data to my other offender-level data (via name, sentencing date, and offense) and threshold a matching score of ~93%.

This final offender dataset provides with nuanced information across the lifespan of the homicide case. Importantly, we have much more depth in our analysis of particular socio-demographic variables. For example, rather than only recording race as a categorical variable that obscures the black box of decision-making, I also have information about language of origin, birth city, and photographs of each individual. This new dataset also includes specific information about court workers that is key to this analysis. Namely, I have the unique bar id numbers for judges, prosecutors, and defense attorneys. This will allow me to stay consistent with the current literature on judicial bias, while extending my analysis into the domain of prosecutorial bias.

### *Victim Data*

The victim-level data is less straightforward to build, primarily because there are fewer available data options with identifiable state-wide coverage. If this study were taking place in the last ~5 years, social media data might be a highly useful tool in this analysis. Since I am extending back to the mid-1970s I instead rely on newspaper coverage. After trying several strategies (scraping Google News, the Lexis Nexis API) I

have decided to use the Access World News dataset, which has several distinct advantages for text analysis. It contains data on over 120 newspapers in Florida, is curated by Northwestern University, and outputs in standard formats.

Before describing the specific search strategy it is necessary to think about homicide articles on the micro-level. The average homicide article in this corpus is ~350 words and contains systematic information about offender/victim names, ages, genders, and types of killings. I am able to leverage specific computational tools to locate each piece of information. I leverage the Natural Languages Tool Kit (NLTK) to identify names in an individual article. I use NLTK and word ontologies to identify killing types and gendered information. Finally, I use simple numeric searches to look for age information. Assigning these attributes to a victim or offender is possible because I already have the offender information. By removing the offender information from consideration I am to make a prediction of 1) the name of the victim 2) the age of the victim 3) the gender of the victim and 4) the killing type. By building a corpus of multiple articles per case I am able to refine these predictions using cross-corpus consistency.

I use three validation techniques to further refine the victim information predictions. First, my research team conducted painstaking manual validation to ensure the code was identifying the correct victims. Second, I conduct topic analysis using a Latent Dirichlet allocation (particularly useful for documents with a small set of topics that use a small set of words) to ensure the articles are actually about a killing. Third, I use the Word2Vec package to computationally measure the space between words. Word2Vec transforms words into vectors, allowing me to measure the Euclidean space between vectors. This is particularly useful when measuring the vector-space between killing words and names and the vector-space between names and gendered words.

After validating the victim data I am able link it back to the offender data due to my two-part search strategy. The initial article search is done using offender names, state location, and a killing word (i.e. kill, slay, dead). After conducting the text analysis, the search is repeated using the name of the predicted victim. This gives us further validation of correct victim identifications. The total number of articles and wordcounts are then averaged for each case to create the newsworthiness variable. This final calculation

finishes the data build which now extends across the life cycle of a case for both victim and offender (see Figure 1).

In deriving a computational way to build much deeper data in a tenable timeframe, we trade absolute certainty of individual data points. In the course of the data construction I do everything I can to limit this distortion. The primary limitation of this procedure is that it must be adapted by state, since every state using different methods to catalogue and release data.

**Figure 1: Example Final Data**

Florida Legal Bias Data						
Court Docket ID#	DOJ Variables	Court Record Variables	DOC Variables	Matchscore	Victim Variables	# Words of Coverage
08011331CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011424CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011508CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011578CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011699CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011699CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011699CF10A	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011699CF10B	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#
08011699CF10B	DOJ Variables	Court Record Variables	DOC Variables	#	Victim Variables	#

### Impact/Significance

This project will be a significant contribution to legal and sociological literatures surrounding bias in the criminal justice system. At the upcoming HRWG meeting I will share my initial findings in hopes of contributing to our academic discussion of legal bias. This new dataset allows me to ask many different types of questions. It will allow me to investigate how prosecutorial bias affects sentencing outcomes. It will also let me measure how the demographic relationships between victim and offender matter in homicide sentencing. I can also draw some conclusions about which types of homicide cases are most newsworthy. Finally, I will be able to validate (or invalidate) some our existing data tools, like race-identifying API's that are growing in popularity in computational social science.

I also hope to emphasize that many important sociological questions call for data creation that can be facilitated with computational methods. Computational techniques do

not have to be individually complicated to solve large-scale data problems. In this project I do four relatively simple computational tasks: 1) I automatically convert PDFs to csv files 2) I scrape publicly available data 3) I conduct basic text analysis to count the number of words and retrieve specific text and 4) I use fuzzy matching to connect previously discrete data. Computational methods offer exciting new ways to connect and interpret data that I hope to explore in crime and homicide-specific research.

# In Search of New Theories of Racial Disparities in Rates of Homicide: Extending and Amending the Concept of Social Disorganization

Presenter: Darnell F. Hawkins, Professor Emeritus, the University of Illinois at Chicago

Roots and Beginnings: Words of Wisdom from the Past:

Two sorts of answers are usually returned to the bewildered American who asks seriously: What is the Negro problem? The one is straightforward and clear: it is simply this, or simply that, and one simple remedy long enough applied will in time cause it to disappear. The other answer is apt to be hopelessly involved and complex--to indicate no simple panacea, and to end in a somewhat hopeless---There it is: what can we do? Both of these answers have something of truth in them: the Negro problem looked at in one way is but the old world question of ignorance, poverty, crime and the *dislike of the stranger*. On the other hand, it is a mistake to think that attacking each of these questions single-handed without reference to the others will settle the matter: *a combination of social problems is far more than a matter of addition—the combination itself is the problem.*

\_\_\_\_\_ W. E. B. DuBois, 1899, *The Philadelphia Negro* (emphasis added)

As a group, New York's Puerto Ricans are poorer than its blacks.....If violence were a simple function of poverty and social class, therefore, one would expect as much violent crime among Puerto Ricans and other Hispanic residents of New York as among black residents. In fact the rates are strikingly different.

\_\_\_\_\_ Charles Silberman, 1978, *Criminal Violence, Criminal Justice*

A propensity to violence was not part of the cultural baggage black Americans carried with them from Africa; the homicide rate in black Africa is about the same as in Western Europe, and well below the rate in either white or black America. Indeed, the black American homicide rate is three to five times the black African rate. Violence is something black Americans learned in this country.

\_\_\_\_\_ Charles Silberman, 1978, *Criminal Violence, Criminal Justice*, citing Paul Bohannon, *African Homicide and Suicide*.



The important fact about rates of delinquency for negro boys is that they, too, vary by type of area. They are higher than rates for white boys, but it cannot be said that they are higher than rates for white boys in comparable areas, since it is impossible to reproduce in white communities the circumstances under which Negro children live. *Even if it were possible to parallel the low economic status and inadequacy of institutions in the white community, it would not be possible to reproduce the effect of segregation and the barriers to upward mobility.*

\_\_\_\_\_ Clifford Shaw and Charles Mckay, 1942, *Juvenile Delinquency and Urban Areas* (emphasis added)

By the beginning of the nineteenth century, people of African descent---having survived the trauma of enslavement, the horror of the Atlantic crossing, and the nightmare of American slavery--had rooted themselves on the west side of the Atlantic. Most were American born. Many had American-born parents, grandparents, and even great grandparents. Black life took a variety of forms--slave and free, rural and urban, and plantation and farm---and it differed from place to place. But, for the most part, African Americans were confined to the long arc along the North American coast reaching from New England to the Mississippi Valley, with the majority crowded into a narrow strip of land between the Atlantic tidewater and the Appalachian Mountains. *There over the course of the seventeenth and eighteenth centuries, distinctive African American cultures had emerged, a confluence of the diverse heritage of Africa, the American experience, and the unique status of peoples of African descent*

\_\_\_\_\_ Ira Berlin, 2010. *The Making of African America* (emphasis added)

The prescient observations above span more than a century of social science writings on conditions in black America, including, crime, delinquency, and homicide. Each is cited within it, and together constitute the conceptual pillars of the 2017 book that is the focus of today's HRWG presentation. The book is *Roots of African American Violence: Ethnocentrism, Cultural Diversity, and Racism* by Darnell F. Hawkins, Jerome B. McKean, Norman A. White, and Christine Martin. It was written in response to what we describe as a paucity of *explicit* theorizing on the *causes* of the well documented and very large racial disparities in rates of homicide and other crime observed in the United States for more than a century.

As lead author, the purpose of my HRWG presentation is to provide the audience with a better understanding of the conceptual contours and internal logic of the proposed theory of race, place, culture, and homicide that is the focus of the book. The quotes below from the work of DuBois, Silberman, Bohannon, Shaw, and McKay, and Berlin were cited in our book and together helped guide our own work. They did so by succinctly posing questions and making observations that lie at the heart of not only our efforts but also the whole of the social scientific enterprise that has tackled the task of trying to explain how race and ethnicity are linked to varying levels of crime and violence.

More than a century ago, W.E.B. DuBois, in his pioneering and often overlooked study of black Philadelphia lays out the parameters of the task at hand, and the question posed at the

start of our own work. That is, what accounts for the much higher rates of homicide found in African American urban communities.

In his study of criminal violence written in response to the rise in crime and violence during the late 1960s and 70s, Charles Silberman takes on the causation-identifying challenge and, like DuBois, reminds us of and offers counterpoints to the often fruitless detours and dead ends often taken in attempting to account for those group-level differences.

The work of Shaw and Mckay, while also voicing the need for avoiding simplistic accountings of the racial differences they observed in their now classic study of social disorganization and urban life, offer food for thought regarding the kind of paths that must be traveled to account for racially variant rates of crime and violence in Chicago.

Finally, in recognition of the historical dimensions of the theory we outline in our book and the need we express throughout to place our largely criminological theory making venture firmly within the framework of past studies of race and ethnic relations in the U.S., we consulted the important work of Ira Berlin.

Using a sociology of knowledge approach, my presentation will address:

- 1) a synopsis of the essence of the theory of ethnocentrism, race, and crime outlined in our book *Roots of African American Violence*
- 2) how more than forty years of research on race differences in homicide led to the kinds of questions, including those posed in the quotes from the past cited above, that the proposed theory of race and homicide was designed to attempt to address.
- 2) how my observations as societal "participant observer" provided insights into the phenomena discussed and contributed to the making of the theory and the presumed logic underlying it.

# Micro Place Homicide Patterns in Chicago, 1965 through 2017

Andrew P. Wheeler<sup>i</sup> and Richard L. Block<sup>ii</sup>

## Research Questions and Methods

Based on the prior literature review of temporal crime patterns in Chicago, and on the more recent scholarship on micro-place crime patterns, we have identified several broad research goals. One broad goal is to identify whether the findings of prior micro-level research examining all crimes generalize to the spatial distribution of homicides alone. Do the findings of spatial clustering (i.e. *Weisburd's law of crime concentration*) generalize to homicides alone; do the findings regarding temporal consistency over a long period of time (Curman, Andresen, & Brantingham, 2015; Weisburd et al., 2004; Wheeler, Worden, & McLean, 2016) generalize to homicides alone? A unique aspect of the dataset here is its length, including the spike in 2016 and 2017. Since recent analyses of temporal crime trends have focused on times and cities with declining crime rates, it may be that such spatial consistency does not generalize to times and places that crime is more variable. A second broad goal is to identify whether micro-place analysis of Chicago homicide identifies any unique spatial patterns, compared to prior neighborhood-level research of Chicago homicide over the same period.

To address these research goals, we identified the following research questions that motivate the specific analyses we undertook:

**Question 1:** Is homicide clustering spatially consistent over the entire 53 years? Are homicides more or less clustered during high and low homicide years?

**Question 2:** Do micro places that have homicides follow unique temporal trajectories? If they do, what are the spatial distributions of those trajectories?

**Question 3:** Are the recent increases in homicides in Chicago in 2016 and 2017 concentrated among micro places that had historically high homicide rates, or is the recent increase attributable to places that are not historical hot spots of homicides?

To answer Question 1, we use the generalized Gini index proposed in Bernasco & Steenbeek (2017), which accounts for situations with fewer crimes than geographical units. This is the case for temporal windows in Chicago homicides that are smaller than the entire 53-year period. The original Gini Index measures inequality in a distribution - here inequality in the spatial distribution of homicide. If  $G$  is the original Gini coefficient (which can be written many ways, see Allison, 1978 for one reference), the generalized Gini (GG) index can be written as:

$$GG = \max(n/c, 1) \cdot (G - 1) + 1 \quad (1)$$

where  $c$  is the total number of crimes in the sample, and  $n$  is the total number of spatial units. In cases of more crimes than spatial units, the generalized Gini index is equal to the more usual formulation. When there are fewer crimes than spatial units, however, the adjusted index will reduce the size of the original Gini index, and the domain of potential values is between 0 (no clustering) and 1 (all homicides in the same micro-place).

To visually examine the crime concentration over the time span, we estimate kernel density maps at five-year intervals, and display the highest density region (Hyndman, 1996). This provides a spatial analog to the typical Lorenz curve, and allows

one to illustrate on a map the approximate area containing 50% of the homicides in a given time span. This mapped area will represent a greater area than the micro-level grid cells, because the kernel density estimate smooths out homicides over a greater area. However, it provides more visual stability to examine year to year pattern changes.

These techniques, however, are not suitable for assessing micro-level temporal stability. Showing that 5% of places account for 50% of crime does not indicate that the same specific set of micro-places accounts for a higher level of crime across time spans. To better assess long term temporal patterns (Question 2), we fit growth mixture models to identify temporal clusters of differing trajectories (Nagin, 2005), and fit zero inflated Poisson regression models using the Stata *traj* plug-in (Jones & Nagin, 2013).

Time series graphs of trajectory groups help to answer Question 3. Were the homicide increases in Chicago in 2016 and 2017 concentrated among a few places? If so, is that concentration limited to places with historically high homicide prevalence, or did the concentration spread to new locations in which homicide was not previously concentrated? Examining the predicted time series trends and paying special attention to the recent up-tick in 2016 and 2017 provides visual evidence to assess this question.

## Data

The homicide data for this analysis come from two sources. Homicides from 1965 through 2000 come from the Chicago Homicide Dataset (CHD) (Block, 1997; Block & Block, 2011), which includes 27,285 homicides.<sup>iii</sup> Homicides from 2001 through 2017 come from the publicly available Chicago Open Data portal, <https://data.cityofchicago.org/>, which includes 8,978 homicides. Each dataset contains individual homicides (one incident can result in multiple homicides). Combining the two results in 36,263 homicides over the 53-year period.

*For both datasets, the location of the incident is recorded where the body was found, not necessarily where the homicide occurred.*<sup>iv</sup> The historical CHD was geocoded automatically and then by hand, because completely automated procedures using Census TIGER files resulted in an unacceptable level of missing incidents (Block, 1995). Homicides were geocoded to the nearest address if possible (for example, a body found in an alley would be geocoded to the street address of the building). However, for some homicide locations, nearest street address would not be correct, such as a body recovered in the Chicago river. In such cases, homicides were manually assigned to the approximate location coordinates based on information in the homicide report. In the contemporary CHD, the location of each homicide is truncated to the 100 block (for example 1200 W Madison St.). These incidents are then automatically geocoded to latitude and longitude coordinates. For both the historical homicides and the contemporary homicides the geocoding hit rate is over 99%.

The spatial unit of analysis used in this study is a set of uniform grid cells of 150 by 150 meters over the entire city. Risk Terrain Modeling also utilizes a small uniform grid. Although much of the recent literature on crime at micro places uses street segments (e.g. Schnell, Braga, & Piza, 2017) or census blocks (Bernasco & Block, 2010), neither is appropriate for this research. First, many Chicago street segments do not include 100 numbers. In many areas, for example, two of the four sides of a “blocks” include only 50 numbers. Second, the earlier CHD was geocoded using a different and spatially less accurate street file than the contemporary CHD. Changes in streets and improved accuracy make it difficult to identify exact repeats between the two datasets (Block & Block, 1995).

Using regular grid cells allowed us to aggregate the two datasets without needing to worry about rectifying slightly displaced streets from the historical data. While this does not guarantee that one street in the historical data could be displaced to a different

grid cell, we examined various time series graphs and changes between the two datasets. We found no instances of large discontinuities from 2000 to 2001. There are 27,473 grid cells in the analysis, of which 10,361 contained at least one homicide over the 53-year period.

## Analysis

Figure 1 displays the yearly counts of homicides in Chicago over the 53-year time span. While homicides had ups and downs from the 1970s until 1994, post 1994 homicides declined from over 900 to around 500 homicides per year. This was until 2016, in which homicides increased to 780. Homicides then decreased to 668 in 2017, but that value is still higher than any year post 2000. However, the number of homicides has been declining every month from mid-2016 through April 2018. Figure 2 displays a choropleth map of homicide counts for each grid cell over the city of Chicago. The lighter grey lines represent community areas, and the two white “holes” within Chicago are areas the Chicago Police do not have jurisdiction.<sup>v</sup> Summed over the entire time span, the maximum number of homicides in a single cell was 46. The maximum number of years that the same cell had a homicide was 26. The maximum in a single cell in a single year was 23 (resulting from arson in elderly housing). No more than 3.5% of the cells had a homicide in any year.

[Insert Figure 1 and Figure 2 here]

Figure 3 displays the empirical cumulative distribution function (ECDF) for the 36,167 geocoded homicides within the 27,473 grid cells over the entire period. One hundred percent of the homicides occurred in 10,361 cells (38%). Therefore, the remainder of Figure 3 is flat at 100%. Figure 3 approximately conforms to Weisburd’s (2015) law of crime concentration. Grid cells with 6 or more homicides (5.5% of all cells) were the location of 51.2% (18,536) of the homicides. The Gini coefficient for the ECDF shown in Figure 3 is 0.80. (Recall the Gini coefficient ranges from 0 to 1, and higher values indicate more inequality).<sup>vi</sup>

[Insert Figure 3 and Figure 4 here]

Figure 4 displays a scatterplot of the yearly generalized Gini index (Y axis) and the total number of homicides (X axis). Color represents the year - earlier years are black and later years turn into brighter red. Gini works only appropriately when examining crime counts that are larger than the total number of spatial units. Here, this is true only for homicides over the entire 53-year period. When restricting such a calculation to homicides in a given year, however, no more than 3.5% of the grid cells will include 100% of the homicides, as there is a maximum of 963 homicides in any year. To account for this, we use the generalized Gini index (Bernasco & Steenbeek, 2017) to examine whether homicides are consistently clustered over the time span and whether the number of homicides in a year is correlated with the amount of clustering. This scatterplot shows a positive correlation between the total number of homicides and the generalized Gini coefficient (with a Pearson’s correlation of 0.59). While 1965 bucks the trend, with fewer homicides but a larger generalized Gini estimate, most of the earlier years (the 1970s) show more clustering and more homicides, while later years (the 2000s) show less clustering and fewer homicides.<sup>vii</sup> Thus, years with more homicides tend to be more spatially clustered. The generalized Gini index declined over time, indicating less spatial concentration. In 2016 and 2017, however, homicide became more concentrated, with a corresponding uptick in homicide numbers.

In a spatial analog to the ECDF chart in Figure 3, Figure 5 displays a series of maps of each five-year period over the 53 years, each showing two things - kernel density estimates as a continuous color ramp (scaling from light to dark), and the 50% highest density region as a contour line (Hyndman, 1996). These maps show whether

the spatial areas that encompass 50% of homicides move to different areas over time or spread out over time. The kernel density estimate uses a bivariate normal kernel, with a bandwidth of 750 meters. The 1965-1969 map displays a smaller and more concentrated area, with the clusters centered in the West and South Side Chicago areas. Clusters continue to be centered on the same two areas over the 53 years, though the 50% region expands as time goes on. In contrast, the most recent map, 2015 through 2017, still shows a West Side cluster, but concentrations in the South Side area are more fragmented and not as pronounced. The map of 1980 through 1984 shows a 50% cluster in the North Side, but this cluster decreases to small pockets in subsequent maps, and then disappears after 1995.

[Insert Figure 5 and Figure 6 here]

Larger 50% highest density regions in any map signify that there is *less* clustering – they do not correspond to increases or decreases in the total number of homicides. Each map in the panel would identify the highest part of the density distribution, and this would occur even if there were very few homicides during that time span. These maps tend to confirm similar spatial patterns as identified by scholars examining spatial trends in Chicago using census tracts or larger neighborhood areas.

Figure 6 provides a more specific look at recent years, 2013 to 2015 (1,347 homicides) compared to 2016 and 2017 (1,448 homicides). The two kernel density maps display very similar patterns, but the later period has a slightly heavier concentration in the West Side. Again, these do not appear to be evidence of homicides spreading out to new areas with the recent spike. Instead, they are simply more concentrated in historical hot spot areas of homicide on the West Side.

To further identify historical patterns, we examine group-based trajectory models for grid cells with at least one homicide over the 53-year period ( $n = 10,361$ ). Using the BIC selection criteria, we select the mixture solution with nine groups. Figure 7 displays the nine trajectory solutions in several panels of graphs. The lines display the predicted trajectories, and the points display the weighted means for each year and group. The top left panel displays trajectories in which homicides increase initially but decrease later. Trajectory group 9 has the highest mean predicted level of homicides, peaking around 1980, but then decreases steadily over time. Group 5 slightly increases until around 1995, then decreases. Similarly, Group 2 increases starting before 1990, but decreases post 1995. In the top left panel, each group shows increases over the study period. Note that Group 7 shows a noticeable increase in 2016 in the weighted mean number of homicides. In the lower left panel, Group 6 starts high and decreases dramatically in the 1970s and subsequently. Group 3 is low and relatively stable over the entire 53 years. Finally, in the lower right panel Groups 1 and 8 show similar recent upticks (2016 and 2017). Group 8 shows very high weighted means in 2016 and 2017. In contrast, the groups in the left panels show little evidence of recent homicide increase. The recent-year increases shown in Groups 4 and 7 continue an increase that began *before* 2016, whereas the recent-year increases in Groups 1 and 8 are not in line with their trajectory prior to 2016. Therefore, the sharp increase in Chicago city-wide homicide levels (283 higher 2016 than 2015) can be largely attributed to Groups 4 and 7. Homicide levels in Group 4 increased by 91 from 2015 to 2016, while homicide levels in Group 7 increased by 106. Therefore, changes in these two trajectory groups drove much of the city-wide increase. Remember, however, that these two groups were already increasing *before* the city-wide spike in 2015.

[Insert Figures 7 and 8 Here]

For a mapped comparison of the locations of homicides in each trajectory group, see Figure 8. Although two trajectory groups (3 and 4) seem to encompass the entire city, others show obvious spatial clusters. Groups 5 and 6 (both declining) have similar

spatial patterns, with a noticeable cluster along Chicago's lake shore towards the north end of the city in gentrifying neighborhoods. Group 7, an increasing trajectory, shows stronger clustering in the West Side and South Side areas, as do Groups 8 and 9. In addition, Group 9, which had the most dramatic rise and fall of any trajectory group (see Figure 8), shows a strong spatial relationship to the location of public high-rise buildings that were demolished in the 1990s. The sharp Group 9 decrease (Figure 7) began in the mid-1980s, before the demolitions had started, but the process of removing residents from the buildings was long underway before the demolitions began.

In general, the trajectory models and their spatial distribution reinforce the generalized Gini metrics discussed above, which show homicide clusters spreading to more places over time. While there is historical consistency in the locations of homicides, it appears that a very high concentration of homicides in the prior decade to 1970 has dispersed to a wider number of locations over the 53-year period.

### **Conclusions and Discussion**

This analysis has shown three things. First, homicides are geographically clustered, but the degree of clustering seems to have diminished over time. Second, there is long term stability in the clusters and numbers of homicides in Chicago's West Side area over the period; Chicago's South Side is more volatile; Chicago's North Side has a temporary hot spot. Third, the analysis was able to identify trajectories of homicide change over time at the level of micro-place grid cells. For example, the analysis shows a set of falling trajectories strongly clustered around former high rise public housing locations.

Taking the entire 53-year period, homicides conform approximately to Weisburd's law of crime concentration. Grid cells with 6 or more homicides (5.5% of all cells) were the location of 51.2% (18,536) of the homicides. However, homicide clusters appear to be spreading out. There was much more clustering in the 1960s and the 1970s than in the late 1990s and the 2000s. Two analyses confirmed this - the generalized Gini coefficient over time, and kernel density maps outlining the 50% highest density region. Analysis also found a moderately large correlation ( $r=0.59$ ) at the yearly level between the generalized Gini coefficient and the total number of homicides. Furthermore, the generalized Gini declined over time but went up in 2016 and 2017. This suggests that when there are more homicides they are more spatially clustered. The homicide spike in 2016 and 2017 showed an additional rise in the generalized Gini coefficient to values similar in the 1970's. The recent homicide spikes did not diffuse homicides into many new locations, although the incidence of homicide was likely higher in specific micro places.

When the analysis used group-based trajectory models to identify and compare patterns of change over the 53-year period, several of the resulting trajectory groups reflected those found in homicide trajectories at the census tract level (Stults, 2010). However, the present analysis indicates that such large areas are not monolithic. High homicide trajectory groups may be adjacent to low homicide trajectory groups. Prior work on crime trajectories at micro places (Groff, Weisburd, & Yang, 2010; Wheeler, Worden & McLean, 2016) found similar results.

One of the Chicago trajectory groups, located in obvious spatial proximity to locations of former high rise public housing complexes, shows a sharp decline beginning in the mid-1980s. Although demolitions began in the 1990s, the process of removing people from the buildings began well before. In addition, two Chicago trajectory groups contributed disproportionately to the homicide spike in 2016 and 2017. These locations appear to be potentially emerging hot spots of crime, even though they may be adjacent

to other trajectory groups where homicides declined during the same period. One lesson from this analysis is that place is vitally important in the study of trends.

This study is largely descriptive. We cannot identify any specific impetus that would explain the dramatic increase of homicides in 2016. While previous homicide trends in the 1970s and 1980s in Chicago had increases of over 100 homicides in several years, the increase from 498 homicides in 2015 to 781 homicides in 2016 is unique in its magnitude. While we suspect public violence is a driver of the increase, and that gang violence is a potential explanation, we were not able to test the spatial relation between gang territories and high homicide micro-places. Gang territories cover much of the city and may have become less relevant over time. More appropriate geographic measures that do not entirely rely on the geographic extent of gang territories, but also include measures of gang intensity and interaction (Block, 2000; Papachristos, Hureau, & Braga, 2013) might provide a clearer picture of how gang behavior influences the spatial distribution of homicide.

Besides the obvious clustering around public housing, we were not able to deduce any other aspect of micro-places with a clear relationship to Chicago homicide trajectory groups. While several of the groups show clustering in the South Side and West Side areas, they do not obviously suggest any micro-place factor influencing the location of the homicide clusters. This is partially due to the difficulty of obtaining historical measures of the built environment over such an extended period. Future research may attempt further exploratory analyses to attempt to indirectly identify micro place factors that influence homicide patterns, such as by examining the location type or other circumstances of the homicide incident over time.

This 2016-2017 spike however provides a unique test for examining the temporal stability of crime at micro places. Our findings show that such homicides were still mainly concentrated among locations that historically had high levels of crime, and the trajectory that contributed the most to the recent increase had been previously rising over entire sample period. This provides further evidence for the tight coupling of crime and place, even during a time of great change in temporal crime patterns, and even when examining the rarer crime of homicide. In turn that suggests that any law enforcement intervention to prevent homicides should likely have a geographic focus.

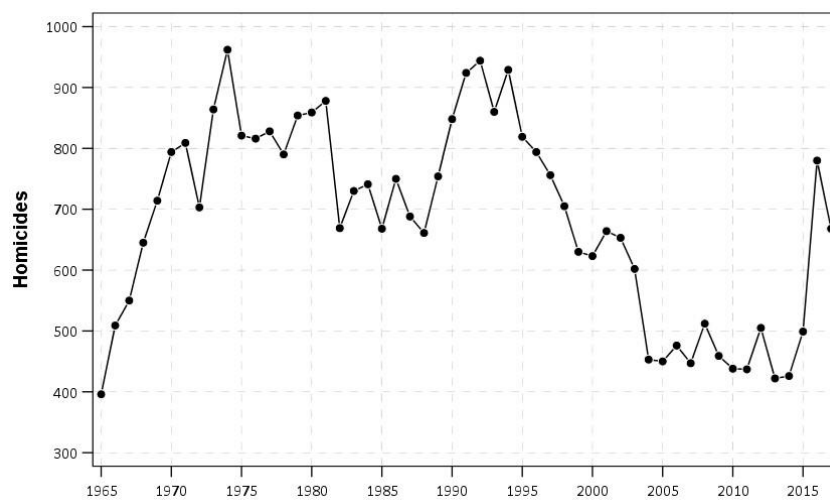


Figure 1: Homicides per year in Chicago, 1965 through 2017



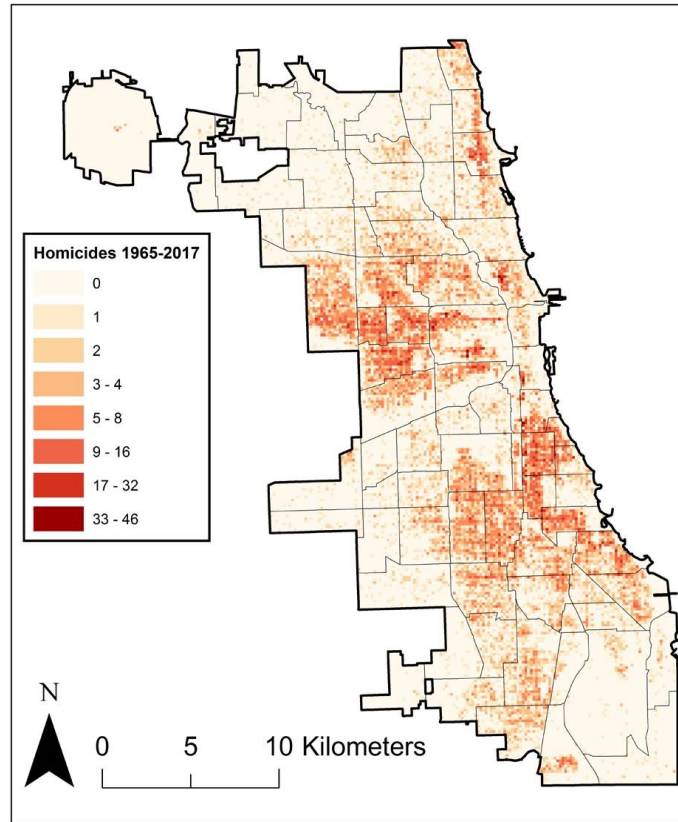


Figure 2: Count of homicides in 150 by 150-meter grid cells in Chicago, 1965 through 2017. Lighter grey lines represent community areas.

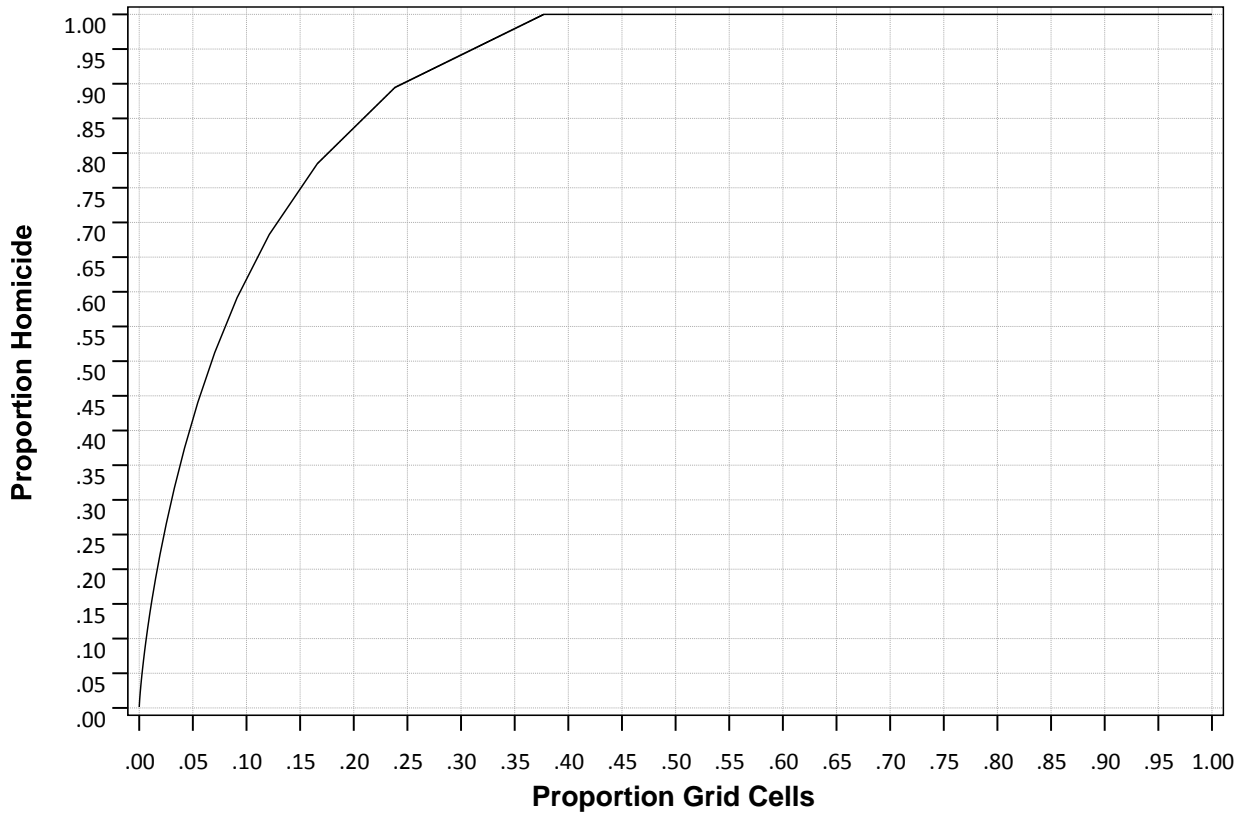


Figure 3: Empirical Cumulative Distribution Function (ECDF) for 36,176 homicides within 27,473 grid cells in Chicago. 5% of the grid cells contain just under 45% of the homicides. This ECDF corresponds to a Gini index of 0.8.

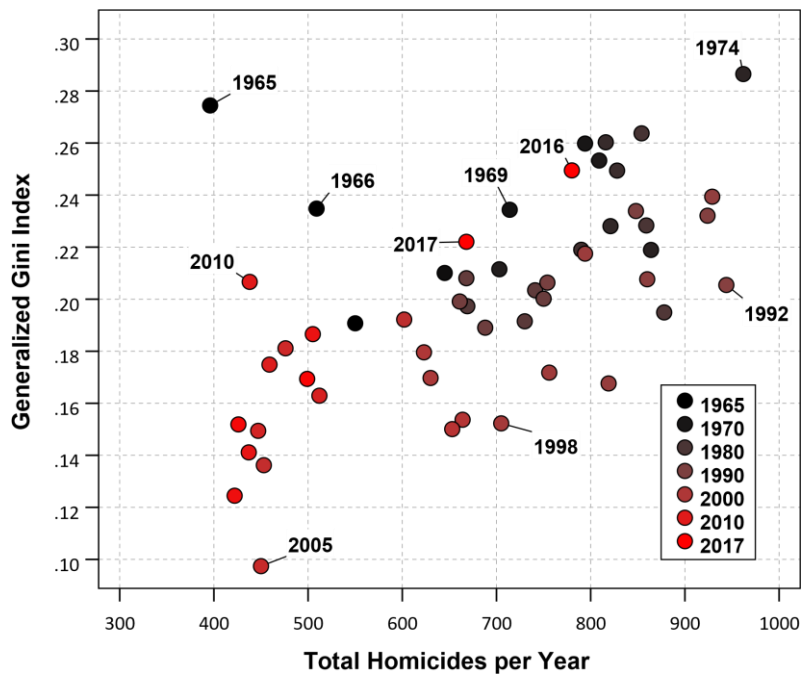


Figure 4: Scatterplot between Generalized Gini Index and Homicides per year. The overall correlation is 0.59. The color ramp for the points is continuous – earlier years are black, and they gradually change to red for more recent years.

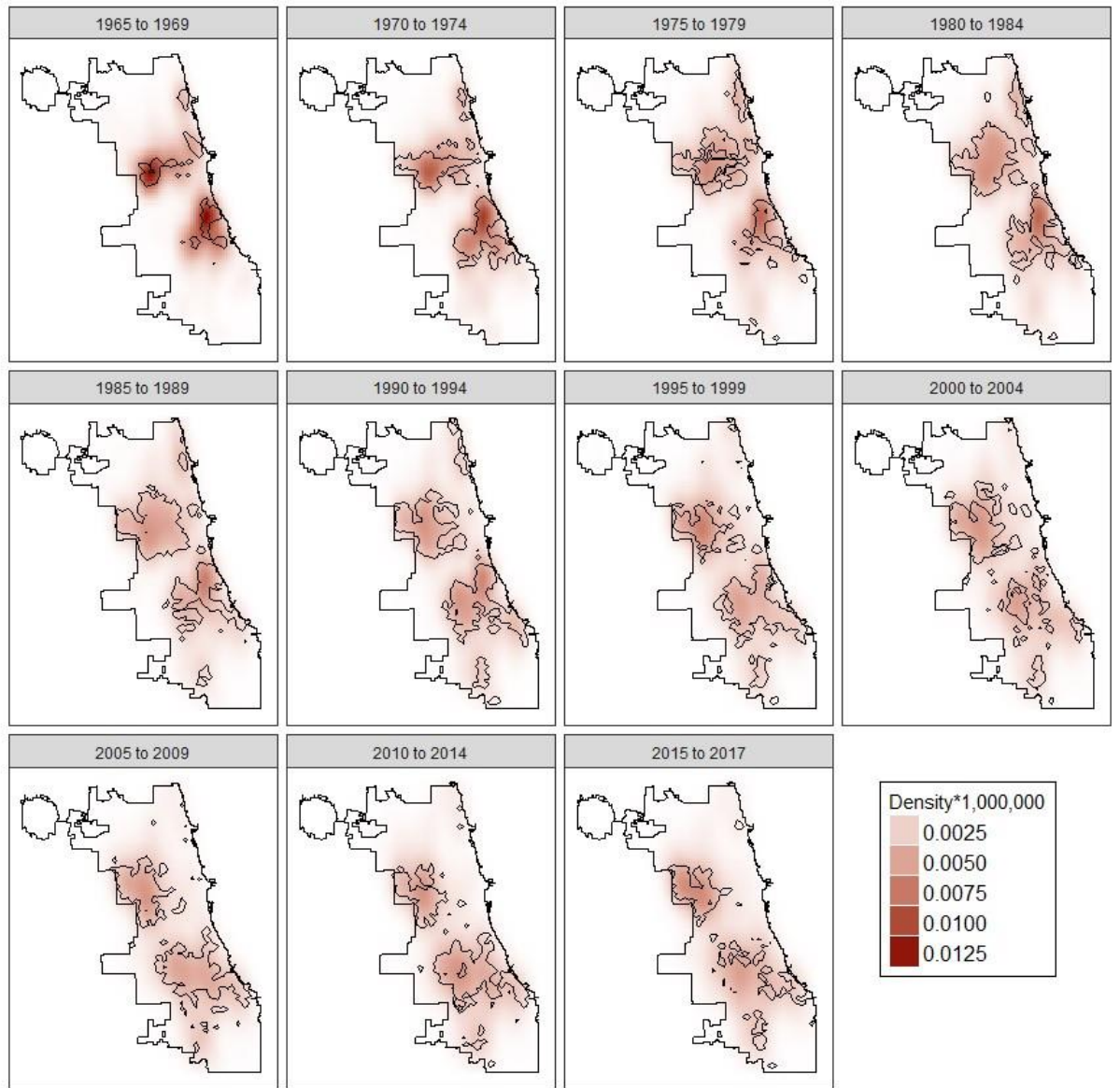


Figure 5: Kernel density estimate and 50% Highest density regions (displayed as a black contour line) per each five-year period. Based on a kernel density estimate of homicide data binned to the centroid of 150 by 150-meter grid cells. Kernel is bivariate normal with a bandwidth of 750 meters.

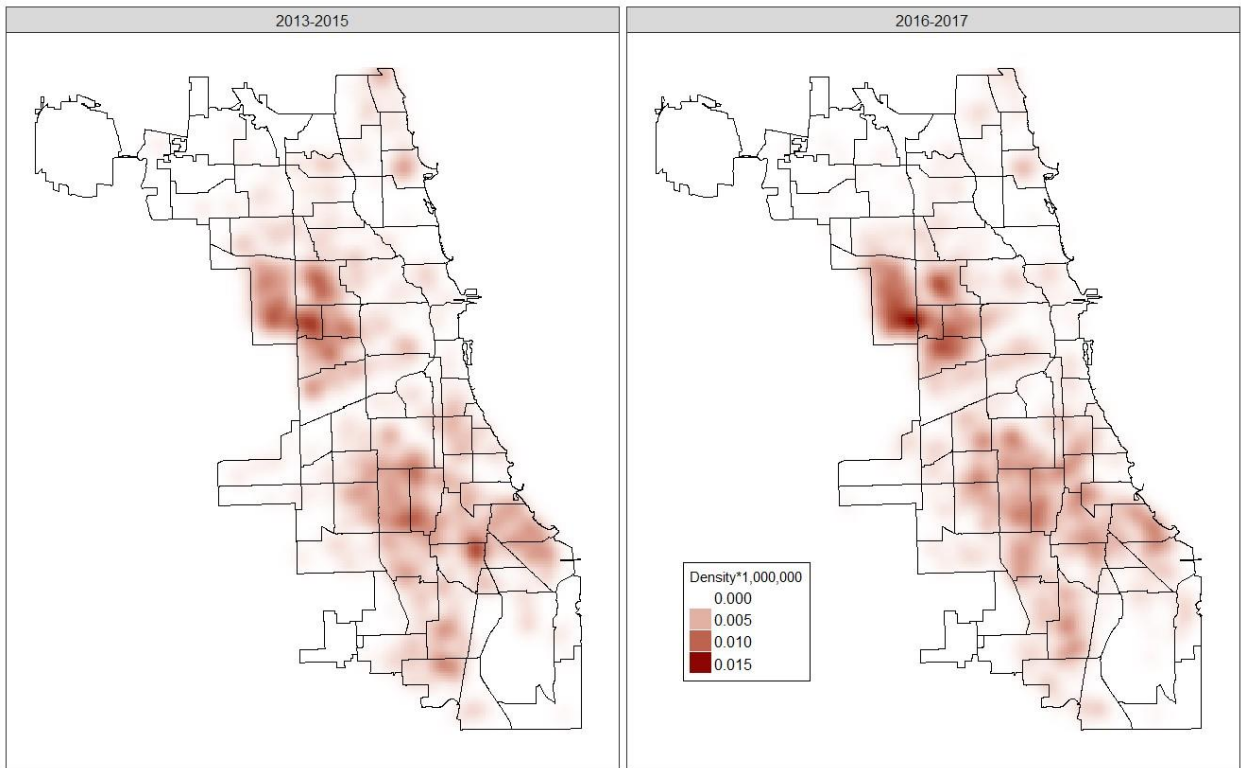


Figure 6: Comparison of kernel density estimates of 2013-2015 versus 2016-2017 homicides.

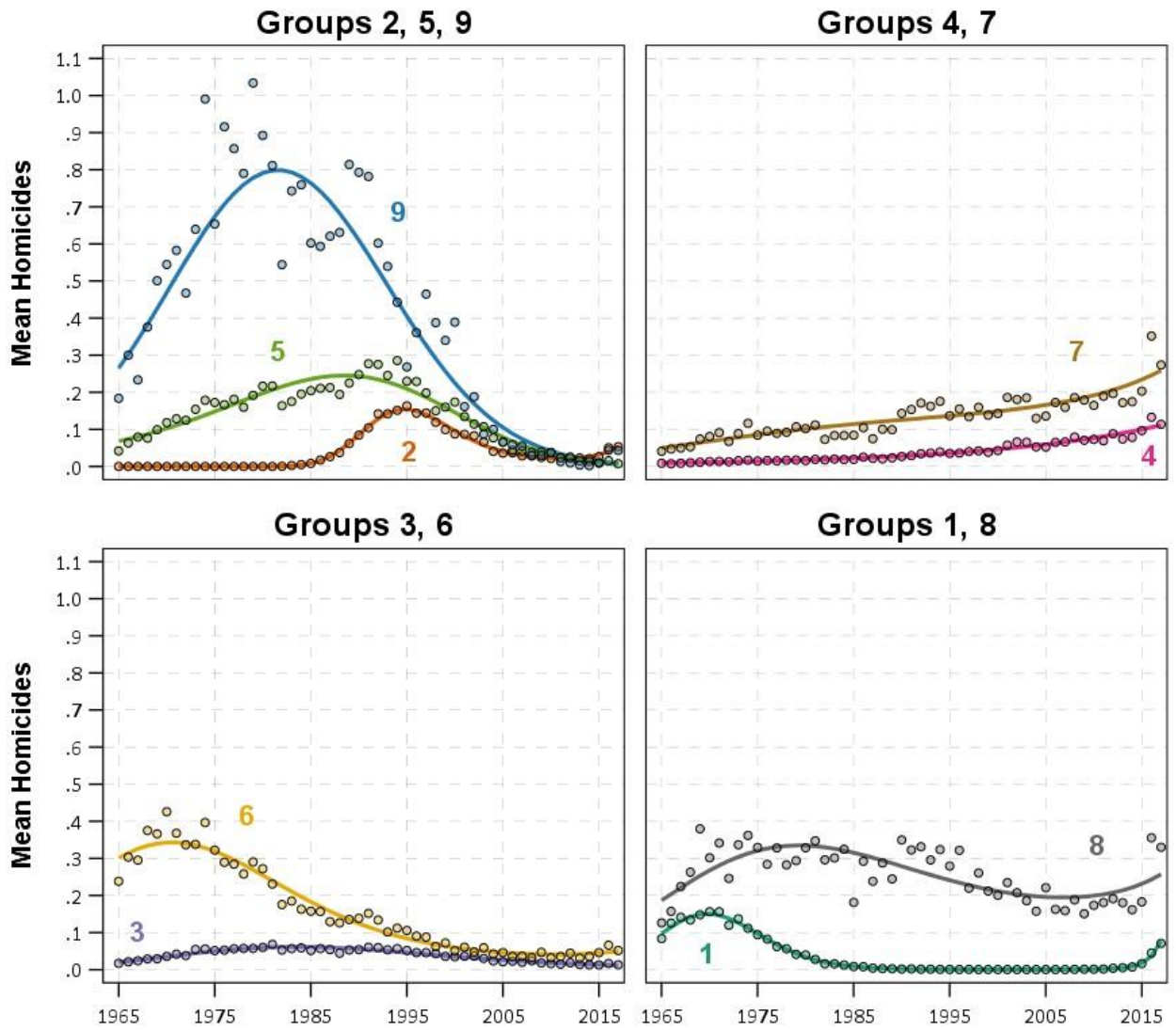


Figure 7: Mean predicted trajectories (lines) and the observed weighted means (circles) for each trajectory group. Groups are separated into different panels to distinguish the lines.

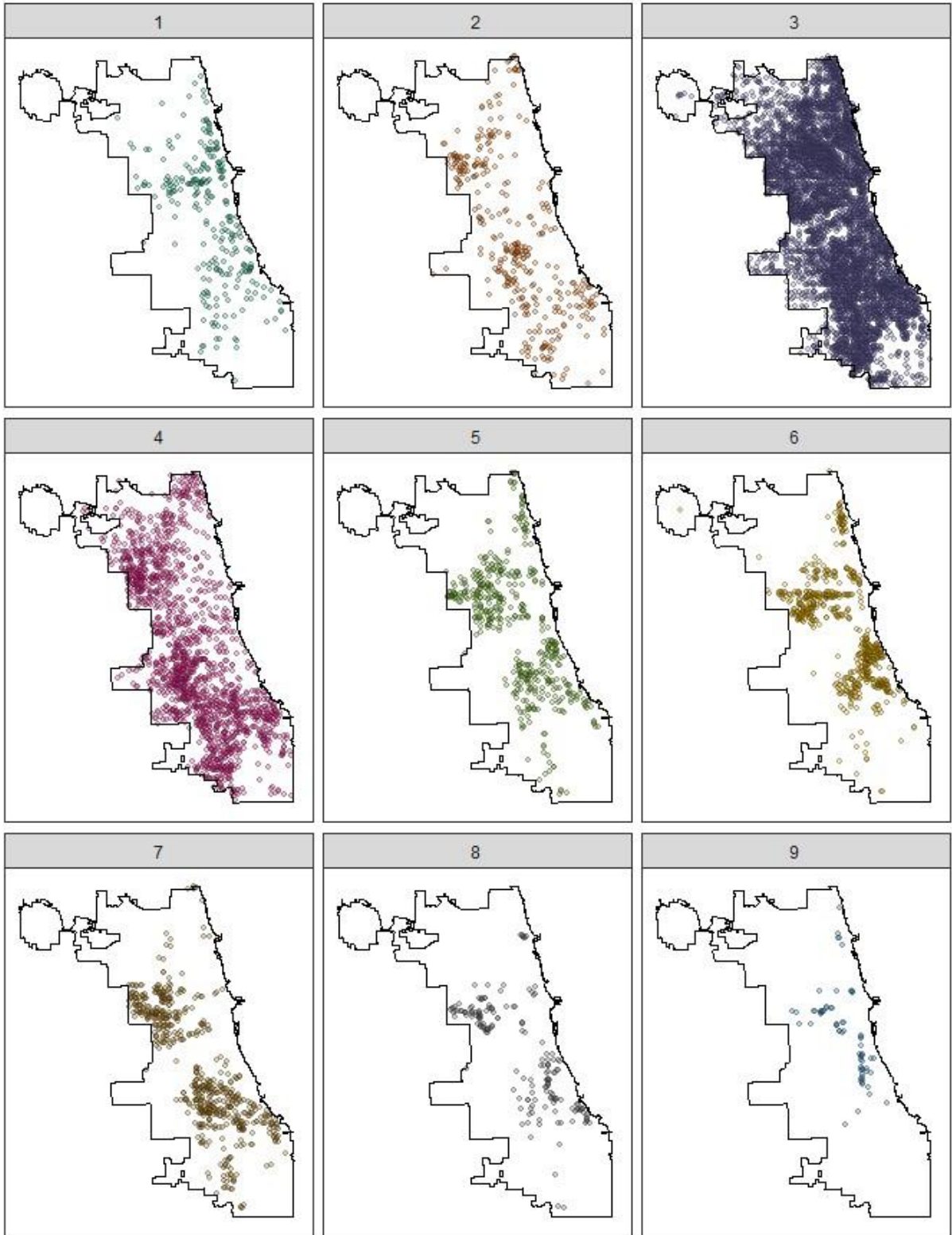


Figure 8: Pin map of the locations of the trajectory groups. An interactive map of the groups can be seen at <https://utdallas.edu/~Andrew.Wheeler/TrajectoryMap.html>.



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<sup>1</sup>Loyola University, Chicago, IL. An extended version of this presentation has been submitted for publication. If you would like a copy, email Richard Block ([rblock@luc.edu](mailto:rblock@luc.edu))

<sup>1</sup>Here we use the year the injury occurred for the historical homicide dataset. This results became known to the police during the time span under analysis but occurred earlier.)

<sup>1</sup>To test the extent to the location where the body was found and the location where the crime occurred differ, in the historical data, we examined the detective narratives for a random sample of 250 cases. In that sample, in 93% of the cases the injury occurred at the same location, 3% occurred elsewhere, and 4% were ambiguous.

<sup>1</sup>The “hole” in the northwest includes Norridge and Harwood Heights. The hole in the southwest is Mt. Greenwood cemetery. Because the Chicago Police Department does not have jurisdiction in those areas, there are no recorded homicides in those locations.

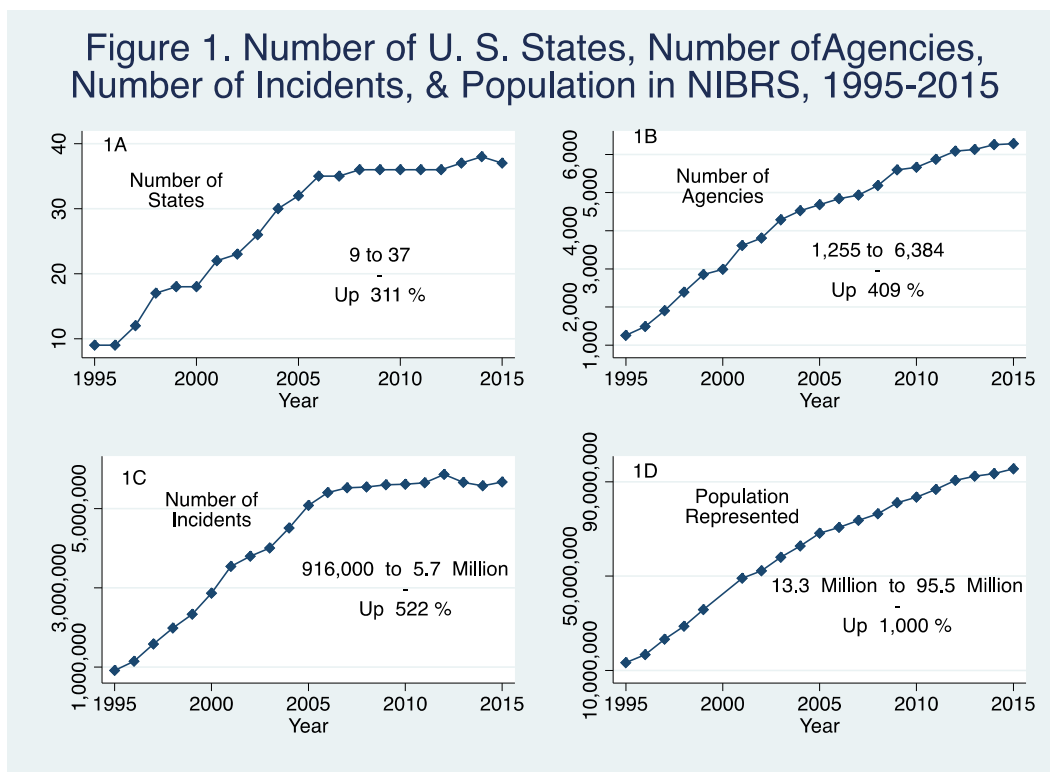
<sup>1</sup>While Bernasco and Steenbeek’s generalized Gini reduces the maximum inequality that a sample can have, there is an additional constraint on the amount of equality a sample of crimes can have due to crimes not being fractionally divisible. For example, for a Gini estimate of zero, 36,167 homicides among the 27,473 grid cells would need to be distributed as approximately 1.3 homicides within each grid cell. Since it is not possible to fractionally divide a homicide, the most equal distribution corresponds to 18,779 grid cells having one homicide, and 8,694 grid cells having two homicides, which equals a Gini coefficient of over 0.16. Note, however, that this lower bound applies only when there are more crime incidents than spatial units.

<sup>1</sup>The CHD starts in 1965 because that was the last low year before a sharp increase in homicides going into the 1970s, and because 1965 was the earliest date in which data were collected in a uniform format.

# U. S. Gun Violence Trends Suggested by Incident-Based Data, 1995-2015

**Roland Chilton, University of Massachusetts Amherst**

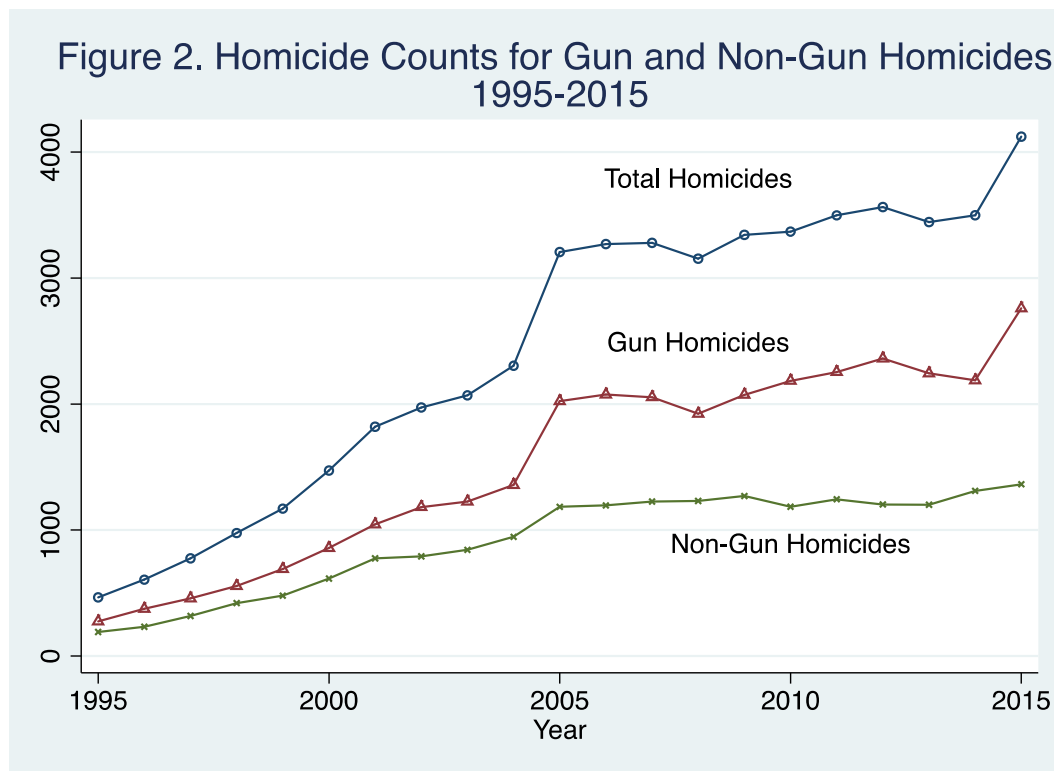
2018 seems like a good year to ask what incident-based data can tell us about gun violence and mass murder. The archives at the Inter-University Consortium for Political and Social Research now make National Incident-Based Reporting System (NIBRS) information available for 1991 through 2015. As many of you know, ever since John Jarvis introduced us to NIBRS in 1993, I have been working with John, Wendy Regoeczi, Victoria Major, and more recently Wenona Rymond-Richman to convince you that NIBRS data are worthy of analysis. This presentation is a continuation of that effort.



The first thing you need to know about NIBRS is that participation has continued to grow since 1995. Figure 1A contains the trend line for the number of states that have agencies sending data. Figure 1B shows the growth in the number of law enforcement agencies participating in NIBRS. Figure 1C shows the number of crime incidents reported for each of the twenty-one years. Figure 1D shows the estimated population represented by these agencies. The population estimates are important because



they allow us to create rates, which are essential for making reasonable year-to-year comparisons of amounts of homicide and other violent crime. Figure 2 contains lines that are not adjusted for population. The blue line, marked with a small circle, indicates that NIBRS agencies reported fewer than 500 homicides in 1995 and over 4,000 in 2015. The red (triangle) and green (x) lines indicate that there were more gun homicides than non-gun homicides reported every year. Moreover the gap between gun and non-gun homicides increased almost every year. I use the term “gun” because it is a shorter, simpler, and in many ways a more effective term than “firearms.” My Marine Corps Drill Instructor would be aghast to hear me refer to a rifle as a gun, but I will use specific terms only when needed.



This comparison must be quickly followed by a comparison using homicide “rates per 100,000 residents” rather than counts. A comparison of homicide rates is better than a comparison of counts because it takes into account the population increase that accompanies an increase in the number of agencies reporting each year. Figure 3 indicates that the homicide rate was higher in 2015 than it was in 1995. Perhaps more importantly, Figure 3 indicates that all of this increase was the result of an increase in gun homicides. The gun homicide rate increased from 2 to 3 (41 percent) over this period. The combined gun and non-gun homicide rate increased by 23 percent, but this was driven by the increase in the gun homicide rate, especially from 2004 to 2015 and from 2014 to 2015. The non-gun homicide rate decreased slightly from 1995 to 2015.

Figure 3. Homicide Rates for Gun and Non-Gun Homicides, 1995-2015

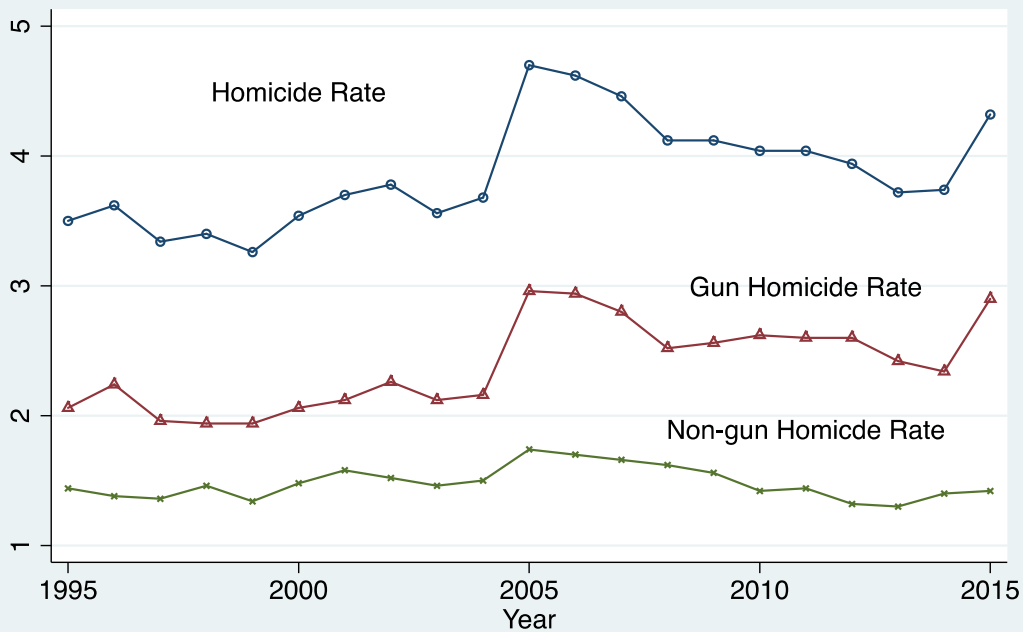
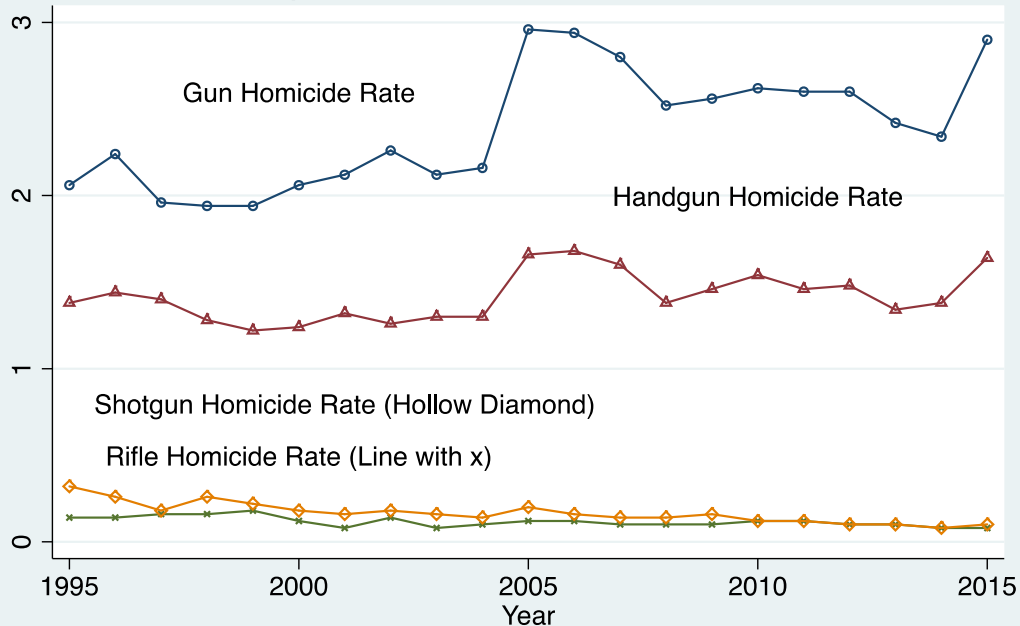


Figure 4 compares the rates for handgun, rifle, and shotgun use in homicides. The rate for the use of rifles and shotguns in homicides decreased.

Figure 4. Homicide Handgun, Rifle, and Shotgun Rates (per 100,000 Residents), 1995-2015

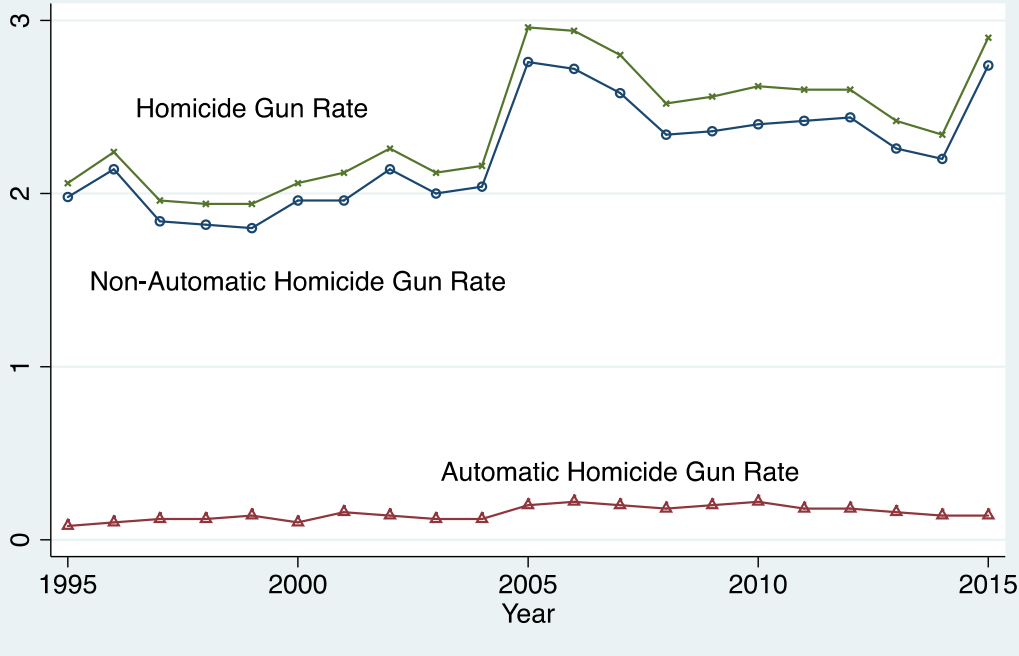


However, the handgun homicide rate was much higher than the rifle and

shotgun rates in 1995, and it increased from 1995 to 2015. In this figure we again see sharp increases in the gun homicide rate and the handgun homicide rate after 2004 and 2014. The reasons for these increases are unclear. I will look to see if they are the result of participation by a few very large agencies.

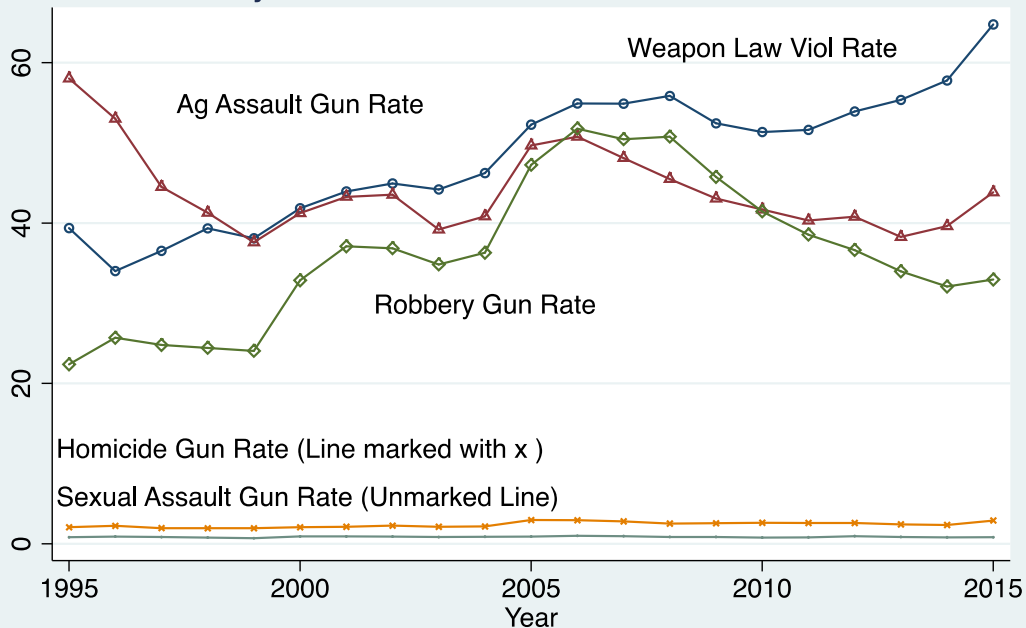
In addition to asking about the type of gun used in a homicide, NIBRS makes a distinction between automatic and non-automatic guns, and the coding instructions say that an automatic firearm is one that “shoots or is designed to shoot more than one shot by a single pull of the trigger.” The instructions may cause some confusion because they include this added phrase in the definition, “without manual reloading.” Nevertheless, the rates in Figure 5 make it clear that automatic weapons are not used in most gun homicides. My summary conclusion is that gun homicides have increased over the 21-year period from 1995 to 2015 in areas represented by NIBRS agencies, and that most of these gun homicides were carried out with regular, non-automatic handguns.

Figure 5. Automatic Gun Homicide Rates & Non-Autmatic gun Homicide Rates (per 100,000 Residents), 1995-2015



This information on the type of gun used (handgun, rifle, shotgun) and whether or not the gun was automatic is collected in NIBRS for four violent offenses and one non-violent offense. Figure 6 contains the annual rates for these offenses. The highest 2015 gun rate we see in Figure 6 is for *Weapon Law Violations*. This offense is classified in NIBRS as a “crime against society,” and there are no identifiable victims for these offenses. About all we can say is that the rate of persons charged with possession of an unregistered gun has been high and has been increasing. In contrast, the rate of gun use in *Sexual Assault incidents* is very low, and the rate of sexual assault reports, with or without a gun, is the lowest of all four violent offenses. However the *Robbery* gun rate increased from 1995 to 2006 before leveling off and decreasing. Still, it was higher in 2015 than it was in 1990. With the homicide and robbery gun rates increasing and the sexual and aggravated assault gun rates decreasing, additional analysis of NIBRS gun data should increase our understanding of the role of guns in violent crime.

Figure 6. NIBRS Gun Rates for Weapons, Aggravated Assault, Robbery, Homicide, and Sexual Aslt, 1995-2015

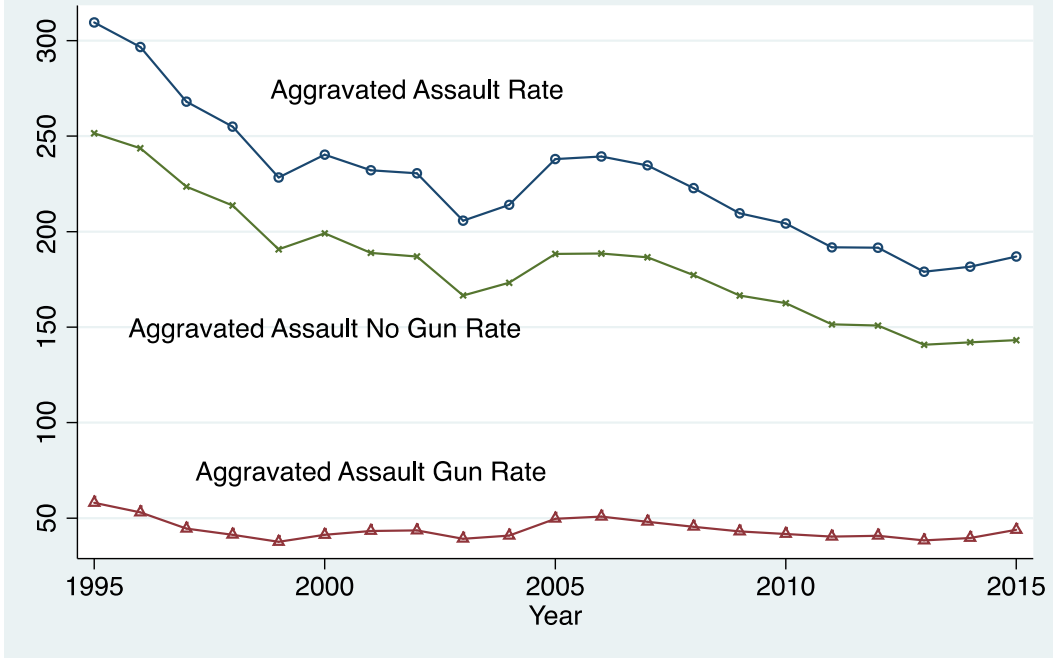


*Aggravated Assault* is the most complicated of this set of violent crimes, because an assault is an aggravated assault if its purpose is to inflict serious bodily injury that might lead to death. This may be indicated by the use of a gun, knife, or other weapon. For this reason, the gun information in NIBRS may tell us more than we now know about Aggravated Assault. Figure 7 compares the rates for aggravated assaults in which a gun was reported with those in which no gun was present. In addition, Figure 7 contains a line showing the *rate* of Aggravated Assaults reported annually from 1995 through 2015.

The non-gun assault rate *decreases* from 250 assaults per 100,000 residents to 140. The gun assault rate *decreases* from 58 to 44, and the total aggravated assault rate *decreases* from 310 to 187. There were no similar decreases for robbery or homicide rates. Both gun robberies and non-gun robberies increased from 1995 to 2015, but the increase in robbery rates were much more modest than the increase in robbery counts. Nor did the sexual assault and homicide rates produce such decreases.

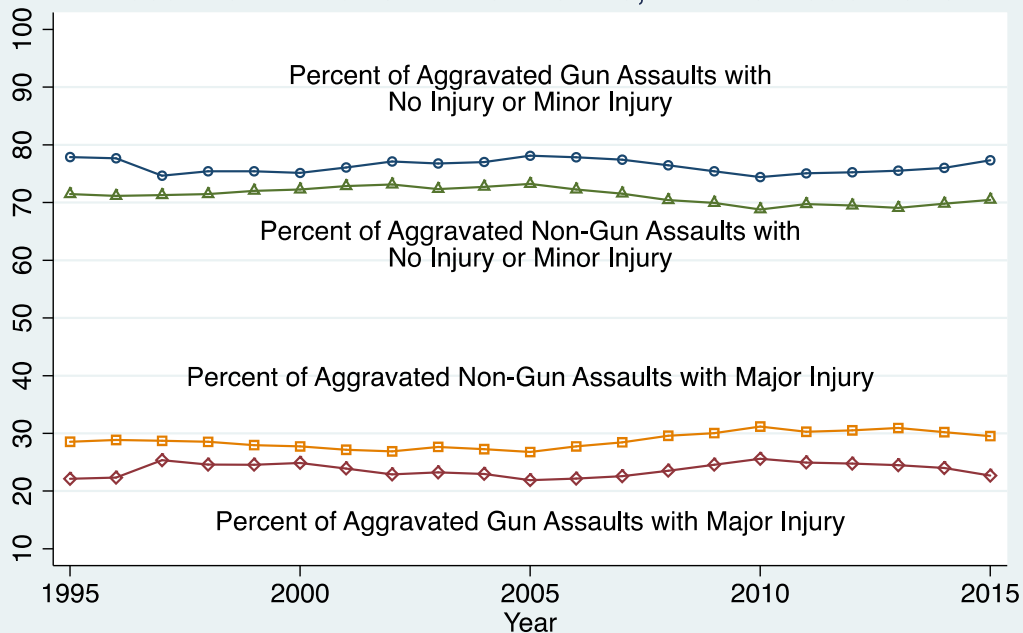
Other than the decreases in the Aggravated Assault rate, one of the most impressive aspects of the Figure 7 is the fact that the rate for Aggravated Assaults when no gun was reported was so much higher than the rate of Aggravated Assaults when a gun was present. This made me wonder if the “Type of Injury” variable in NIBRS would suggest that gun assaults result in more serious injury than assaults without a gun. Since some Assaults are classified as aggravated because a gun was present, this seemed possible.

Figure 7. NIBRS Aggravated Assault Rates, Showing Rates for Assaults with and without Guns, 1995-2015



However Figure 8 indicates 74 to 78 (mean of 76) percent of Aggravated Assaults involving a gun resulted in no injury or minor injury, but non-gun assaults resulted in no injury or minor injury on average 71 percent of the time. The other half of these percentages indicate that gun assaults produced major injury about 24 percent of the time, and non-gun assaults resulted in major injury about 29 percent of the time. Perhaps it is time to add “Gunshot Wound” to the list of possible major injuries, and to designate as Aggravated Assaults only those assaults that resulted in major injuries.

Figure 8. Serious and Less Serious Injuries in Aggravaed Assaults With and Without Guns, NIBRS 1995-2015



The trends in Figure 8 might support such an approach, but the most important idea I hope you take from this presentation is that it is time for criminologists to stop dismissing NIBRS data as less useful than the traditional UCR summary statistics. None of the information in figures 1 through 10 is available in the Summary Statistics effort. However, I do not think the reluctance to analyze NIBRS data is based on the fact that the current data are not representative of the United States. A more important reason for avoiding the data may be the inherent difficulty of analyzing reports that contain information on crime incidents, a large number of offenses, multiple victims, and multiple offenders

Counting the number of Aggravated Assault offenses in Segment Two is not the same thing as counting the number of Aggravated Assault Victims in Segment Four, because there may be more than one victim in some assaults. However, we need to merge both segments because Segment Two has the “Type of Weapon” variable and Segment Four has the “Type of Injury” variable. This complicates any attempt to know what proportion of Aggravated Assault offenses involving gun use resulted in major injury. I may not have it right in this analysis, but is possible to get it right. I think I am suggesting that it is better to acknowledge the difficulties in working with NIBRS and to do so rather than ignore the information and continue to rely on a summary statistics approach develop almost 90 years ago.

The best solution to the problem of representativeness would be a decision by large city departments to participate in the NIBRS effort. Such a move by a fairly small

number of agencies would eliminate the constant concern about distortion. Continuing to rely on the summary statistics data because some large departments cannot or will not participate means foregoing the kinds of analysis attempted in Figures 2 through 10.

With detailed information on almost six million incidents, encountered by over six thousand agencies, representing over ninety-five million residents, it is time for criminologist to look at the NIBRS data. More importantly, it is time for the Homicide Research Working Group to ask the politicians in their states to support the concept of Uniform Crime Reporting by funding incident-based reporting and by urging all of the law enforcement agencies in their states to send crime information to the Uniform Crime Reporting Section of the FBI in a form that is most likely to provide a National Indication of gun violence in the United States.



# Assessing Trends over Time in Homicides and Drug Overdoses

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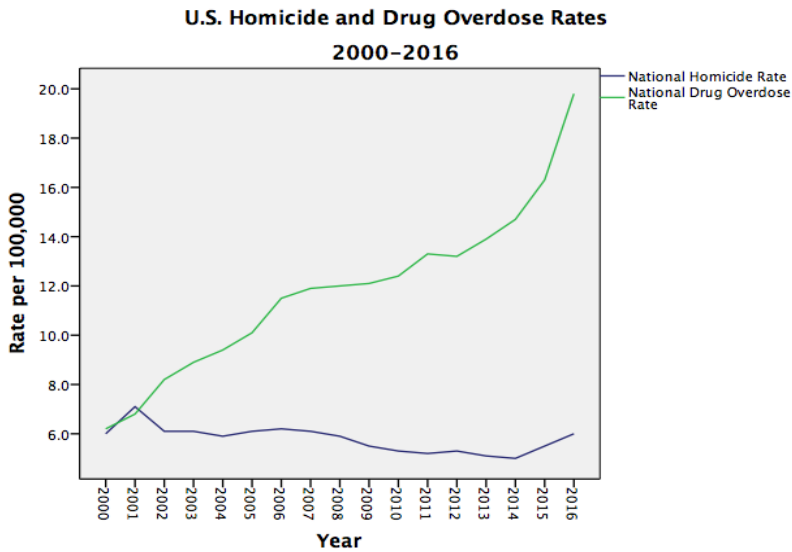
Cuyahoga County Medical Examiner's Office

Homicide and drug overdoses all pose significant public health problems nationally and locally. According to the Centers for Disease Control, there were 15,872 homicides and 47,055 drug overdose deaths in the United States in 2014 (Centers for Disease Control and Prevention; Hedegaard, Warner, & Miniño, 2017). For the most part these causes of mortality have been studied separately. However, the current opioid/opiate epidemic impacting the U.S. and the increased levels of lethal violence occurring in some urban areas across the nation has generated discussions of the potential connections between these public health problems. This report examines trends over time in homicides and drug overdoses in Cuyahoga County, Ohio, a location that has been hit very hard by the recent opioid/opiate epidemic. As the concern with drug overdoses and deaths locally and nationally is largely around oxycodone, heroin, and fentanyl, the local data examined here is limited to those drugs as well as cocaine.

## **National Trends**

At the national level, trends in homicide and accidental drug overdoses have varied considerably. As can be seen in Figure 1, the one cause of death showing a consistent upward trend is drug overdose deaths. The rate of drug overdose deaths in the U.S. more than tripled from 2000 to 2016 from 6.2 to 19.8 per 100,000. After declining from 7.1 per 100,000 in 2001 to 5.0 in 2014, homicide rates experienced notable jumps to 5.5 and 6.0 in 2015 and 2016 respectively. A number of individual American cities, including Cleveland, experienced even greater spikes in their homicide rates in the last two years.

Figure 1

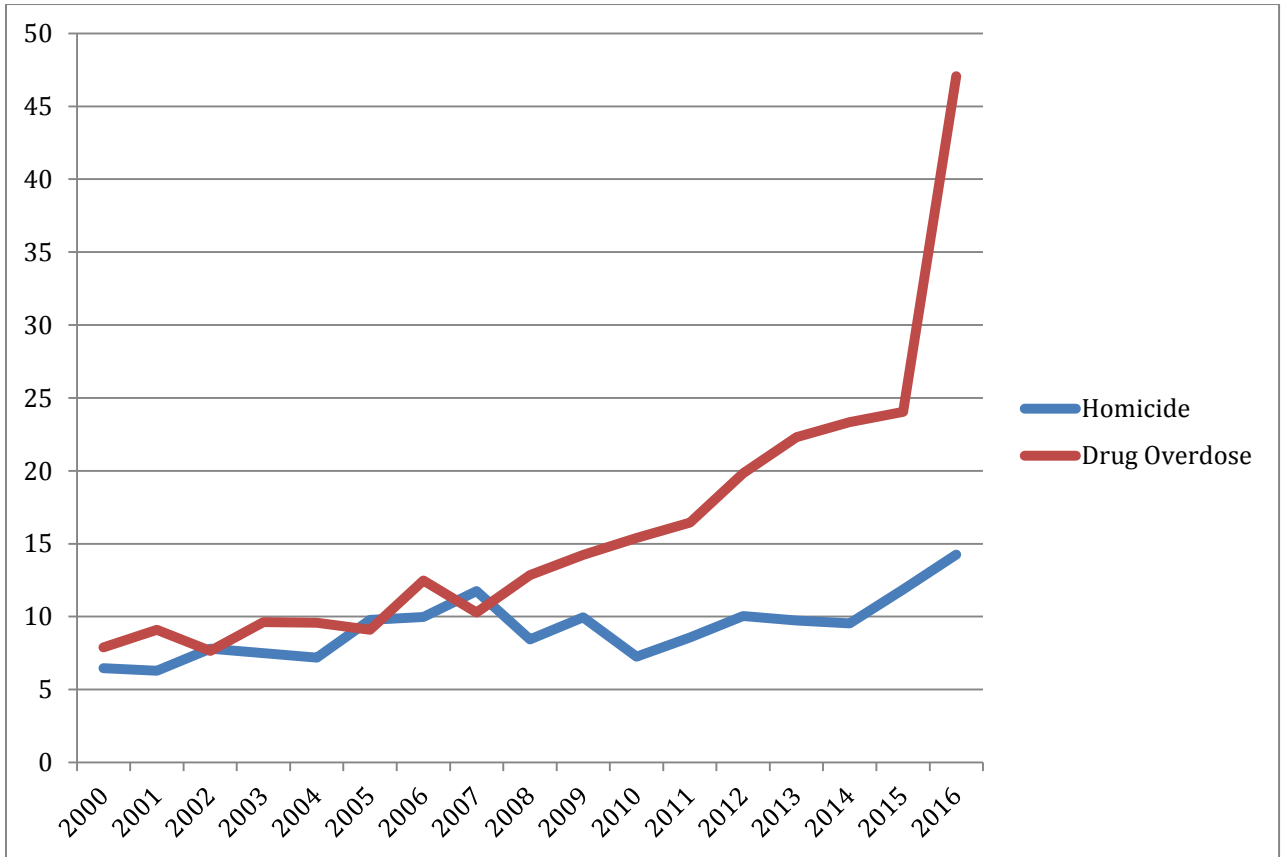


Source: Centers for Disease Control and Prevention

### Cuyahoga County, Ohio

Within Ohio, Cuyahoga County has had one of the highest rates of unintentional drug overdose deaths in the state. Between 2011 and 2016, the average age-adjusted rate was 23.4 per 100,000 (Ohio Department of Health, 2017). The sharp increase in drug overdose deaths in Cuyahoga County is clearly visible in Figure 2. While there is a general increase in drug overdose deaths throughout the time period examined, the number of these fatalities begins to increase rapidly starting around 2011. In contrast, county homicide rates are more variable over this time period but show a slow rise over time.

**Figure 2**  
**Rates of Homicide and Drug Overdoses**  
**Cuyahoga County, 2000-2016**



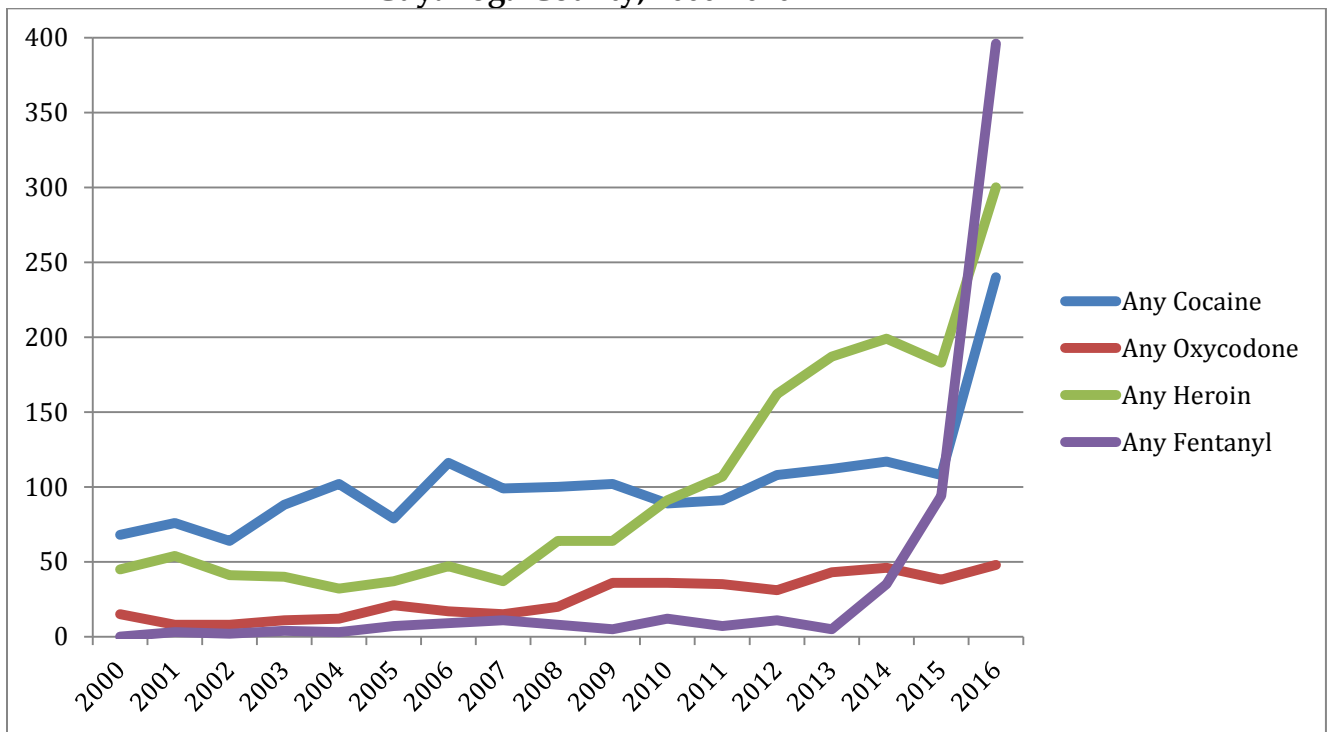
\* Drug overdoses include cocaine, heroin, oxycodone and fentanyl only

\*\* Source: Cuyahoga County Medical Examiner's Office

Figure 3 provides a breakdown of the types of drugs present among those dying of drug overdoses in Cuyahoga County. The sharpest increases occur for fentanyl and heroin. No more than 12 drug overdose deaths annually produced a positive test for fentanyl from 2000 to 2013. This number increased to 35 in 2014, 94 in 2015 and 396 in 2016. The number of deaths involving heroin hovered between 32 and 64 until 2009. That number increased to 91 in 2010 and continued to increase substantially from 107 in 2011 to 300 in 2016. Drug overdose deaths involving cocaine also show a small increase at the beginning of the time period and a very sharp increase in 2016. Interestingly, the number of deaths involving cocaine alone fluctuates over the time period between 48 in 2015 and 90 in 2006. What changes dramatically over these years is the number of cocaine deaths that are combined with one or more of heroin, fentanyl, or oxycodone. For example, there were 63 overdose deaths in 2016 that involved the combination of cocaine

and fentanyl and another 62 involving cocaine, fentanyl, and heroin. Polydrug use among those dying of drug overdoses in the County in general increased considerably over the 17 years of data examined. Drug overdose deaths involving oxycodone were the least frequent throughout the time period, ranging from eight deaths in 2001 and 2002 to 48 deaths in 2016. Oxycodone also appears to hit a plateau around 2009/2010, which corresponds to the time when heroin takes off. This is thought to be related to a substitution of illicit narcotics for legal opioids that were being diverted.

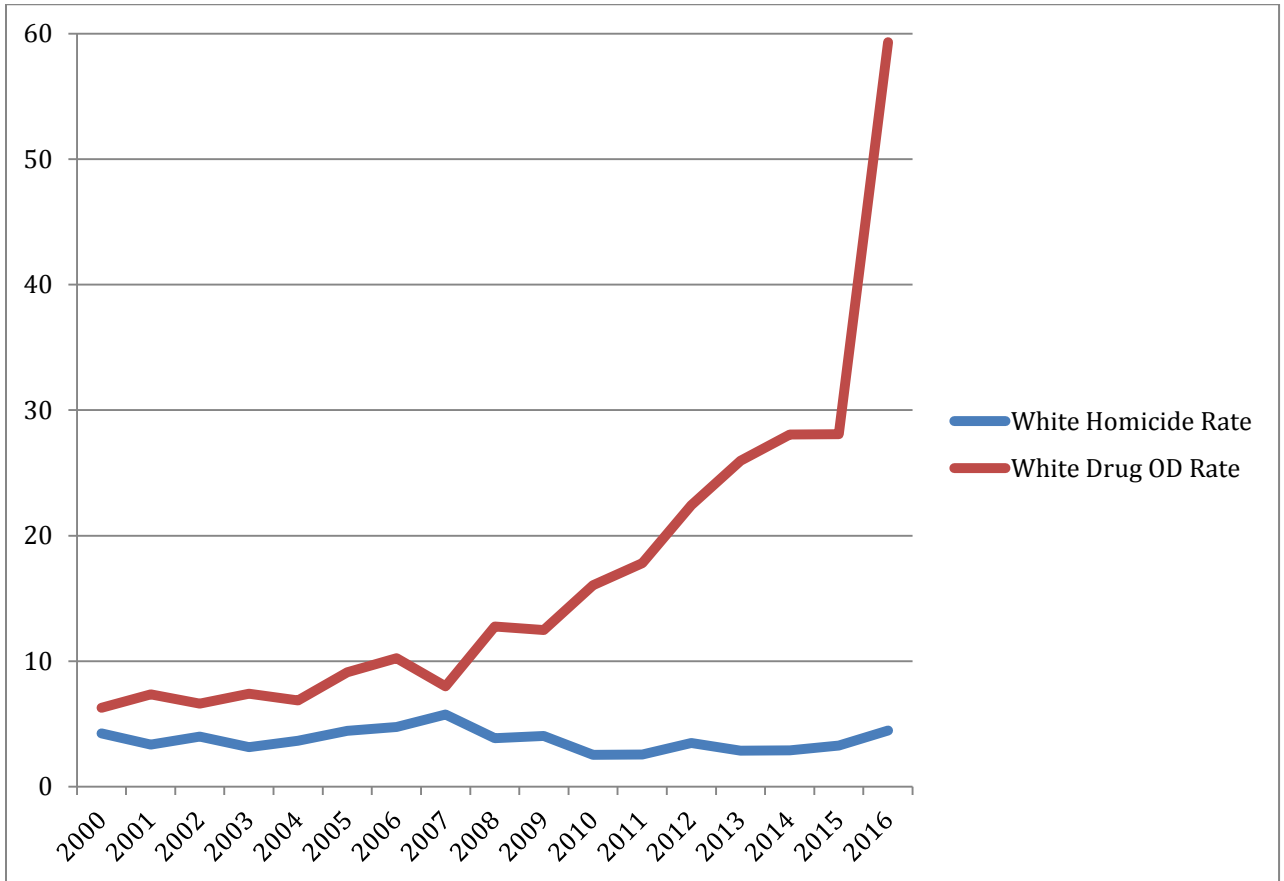
**Figure 3**  
**Drugs Present in Overdose Deaths**  
**Cuyahoga County, 2000-2016**



\* Source: Cuyahoga County Medical Examiner's Office

Figure 4 provides a comparison of the homicide and drug overdose rates for the white population in Cuyahoga County. The white homicide rates fluctuate over the time period examined, peaking in 2007 at a rate of 5.76 per 100,000 and falling to its lowest rate in 2010 at 2.55 per 100,000. In contrast, the white drug overdose rate shows a rapid increase beginning in 2010 that strongly resembles the pattern in Figure 2. The rate more than doubles between 2015 and 2016.

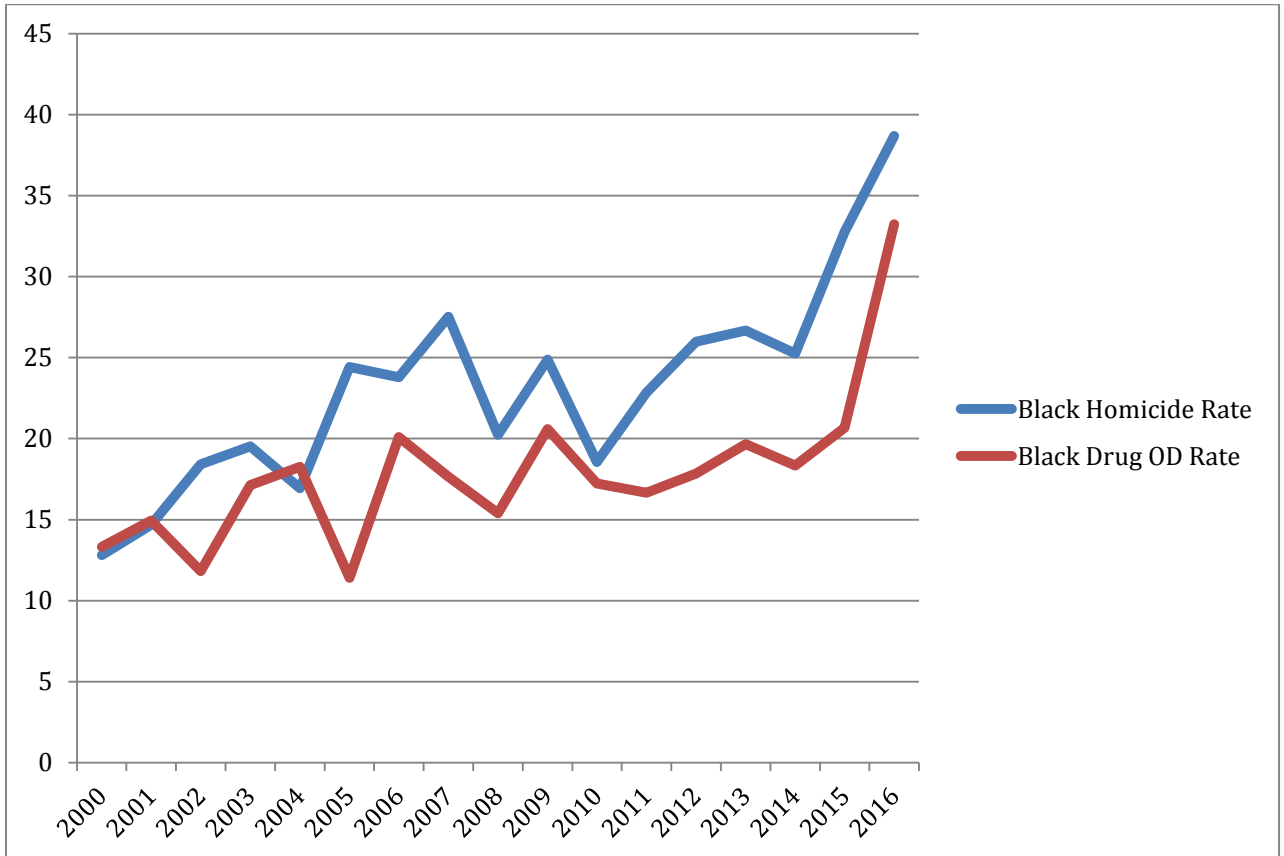
**Figure 4**  
**White Rates of Homicide and Drug Overdoses**  
**Cuyahoga County, 2000-2016**



\* Drug overdoses include cocaine, heroin, oxycodone and fentanyl only  
 \*\* Source: Cuyahoga County Medical Examiner's Office

Figure 5 provides the same comparison for the black population. This graph shows some very interesting differences from Figure 4. In particular, the black homicide rate and overdose rate track much more closely together than is the case for whites. Both rates show a sizeable increase between 2015 and 2016 for blacks. The black homicide rate grows almost threefold from 2000 (with a rate of 12.81 per 100,000) to 2016 (with a rate of 38.68 per 100,000) and is higher than the black overdose rate in all but two years. The black drug overdose rate also increases significantly from 13.33 per 100,000 in 2000 to 33.23 per 100,000 in 2016.

**Figure 5**  
**Black Rates of Homicide and Drug Overdoses**  
**Cuyahoga County, 2000-2016**



\* Drug overdoses include cocaine, heroin, oxycodone and fentanyl only

\*\* Source: Cuyahoga County Medical Examiner's Office

### Discussion

At the national level, drug overdose rates have increased notably since the turn of the century. The dramatic rise in drug overdose deaths in Cuyahoga County closely mirrors the national trend. The county's homicide rates have shown considerable variation across the years examined here. They do not display the general downward trend that has occurred nationally, but they are consistent with the national pattern with respect to the significant increase that occurred between 2015 and 2016. These similarities and differences may indicate that the driving forces underlying increasing drug overdose rates in the United States are occurring across the country, whereas causal factors underlying changes in

homicide rates may be more local in nature. Disaggregating the local data shows that increases in overdoses due to fentanyl, heroin, cocaine, or a combination thereof underlie the dramatic increases in drug overdoses locally. The surge in fentanyl deaths in particular beginning in 2014 is especially alarming. Public health experts should collaborate closely with those in law enforcement to identify effective strategies for addressing the local fentanyl epidemic. Such collaboration efforts are ever more important in light of recent findings indicating there have been substantial increases in the use of heroin as an initiating opioid in recent years (Cicero, Ellis, & Kasper, 2017).

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Notes:

<sup>1</sup> Population data from 2005-2016 are from the U.S. Census Bureau's American Community Survey. The 2000 population data are from the U.S. Census. Population data for the years 2001-2004 are interpolated.

# The Pace University 'Shot' Database: Analyzing Multivariate Correlates to Explain Police Involved Shootings in the United States

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It is an acknowledged fact that officer-involved shooting incidents strain relationships between the police and the community. Whether it is an on or off duty shooting, police discretion on the use of deadly force is a tough and a rare decision, and a split-second act under a tense situation. All experts note that in any violent and shootout moment, things escalate fast and that there is little time to adequately assess the situation on how a police officer can act, and most importantly, work in accordance to departmental policy on deadly force (Springer, n.d.). There is currently no national public database that tracks every officer-involved shooting in the United States. "The repeated and failed calls made by scholars and policymakers for nearly 40 years begs the question of why a national deadly force database still has not been developed" (White, 2015; 224). Whether it is due to concerns that such data might be misinterpreted and misused, but still for police training and education purposes, a national database seems to be the most effective solution. Nevertheless, despite the fact that editorials and periodicals scrutinize police policy, past police practices, police brutality and misconduct in general, they fail to focus on what actions the offender was engaging before the officer deciding to use deadly force. Most editorials and periodicals scrutinize police policy, past police practices, police brutality and misconduct in general and yet they fail to focus on what actions the offender was engaging before the officer deciding to use deadly force. The research is insufficient when it comes to shedding any light on the details of the fatal encounter between the officer and the subject. In fact, little scholarly research has studied the predefined indicators of a police shooting like mental status, weapon possession, type of aggression, type of calls, car pursuit, foot chase, the specific location, number of rounds fired by officer, etc. Researchers must approach it with a high curiosity that reflects 'the devil is in the detail' metaphor.

The FBI's initiative, the National Use-of-Force Data Collection reporting portal, is a significant step to address some of the many questions both for the academics and practitioners concerning police training and the standardization of the use of force policies. Most police departments train their recruits on when and when not to shoot; actual and accurate data never guide the police training. Mostly and simply, officers were told to use their discretion in every incident. However, if "data-guided training" would become a frequent reality of the officer training, potential strategies to alter fatal outcomes in many cases would be taken into consideration for many officers. The data-guided use of force training would enable us to provide the necessary steps that are needed to improve instruction and tactics for the police officer.

Multiple factors lead to a fatal encounter, therefore; the vantage point from many angles may not be available in many of those cases; nevertheless, officer-involved shootings



are the most visible outcome of police training and carry significant implications for the need to assess the use of force policies. The realities of this policy issue are fatal consequences and community perceptions, which suggest that it happens too many times (Eligon, 2015, November 18). For this matter, every excessive use of force incident reflects on the shining armor of the police shield and badges for many police officers. Sometimes, the scale of the event and the burden itself leaves a dent on the image of the police in general. The loss of human life whether carrying a badge, law-abiding citizen or a person engaging in a criminal act is vital to be analyzed in depth. Regardless, such shootings put an enormous strain on police-community relations. And with tensions running high, citizens often raise concerns and questions on all incidents of use force by the police whether excessive or not. Such concerns and criticism pose the question of whether better of training of police officers would reduce such incidents.

The data-guided training program assists police better understand the nature of moments/factors/elements that precede a shooting, such as lethal and non-lethal forms of weapon possession, brandishing or displaying the weapon which might likely heighten the tension between any subject and the police officer. Other factors include a shooter's affiliation with a gang or lack of mental ability at the time of the shootout, which would tend to worsen the escalation of the sequence of events. Therefore, the creation of a multi-level relational database system will undoubtedly benefit many interest groups including law enforcement agencies at all levels, policymakers, the press and the public itself.

The relational database is a type of database management that stores data items in the form of organized formally described tables, merely a new kind of data design (as noted above), which can do multiple functions. This new design reduces everything into numbers and provides a perfect angle to give a full picture; essentially enabling one to link related incidents with groups, individuals, places, properties, etc. It can also store extensive collections of data in a single location, support multiple users, indicate valuable relationships, and can be organized and updated with ease (Hale, 2005, p. 31). Both the scholar and the practitioner have great flexibility and thus able to flush every piece of detail out of the open source document while working with the relational database. The current state of the database is at a point where it is feasible to populate it with the data that is currently collected as shown in Figure 1.

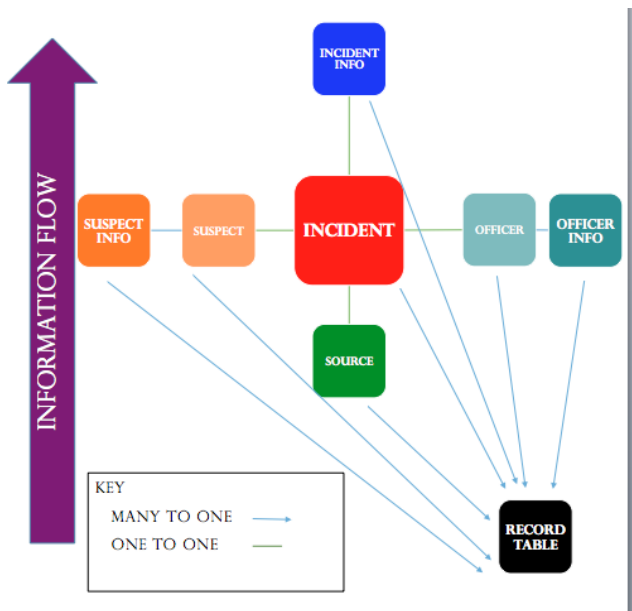


Figure 1. Relational Diagram of SHOT database.

Providing reliable data to researchers is crucial because many police departments do not keep separate records of officer-involved shootings.

There has been an interdisciplinary effort to develop a prototype of a comprehensive database to define and consolidate information of police shooting incidences throughout the United States. One such attempt took place at Pace University in New York called SHOT (Statistics Help Officer Training) project, which is a joint effort of the Departments of Criminal Justice and Security and Information Technology from the Dyson College and Seidenberg School, respectively. There are two primary objectives in this project: (1) to improve data systems for studying officer-involved shootings by building a data repository of police shootings from open sources and making the findings from the data through a publicly accessible Internet interface; (2) using open data to increase transparency, build community trust, and support innovation. With the creation of a relational database system, this project aims to achieve early warning systems and improve internal accountability in a police department.

Some significant analytical questions below show the value of the SHOT system for potential future scholarly products as well as have the potential to provide enough information for professionals, practitioners, and policymakers of the criminal justice system.

Descriptive

- 1) In how many of those shooting cases does a suspect use or brandish a gun?
- 2) How have many officer-involved shootings (local-state-federal) occurred since 2000?
- 3) How many rounds does an officer fire and what is the average number of the bullet hitting at the suspect during a deadly encounter?

4) Where in the U.S. have these shootings been taking place since 2000?

Inferential

5) What is the relationship of suspects with guns and shooter or police officer fatality?

6) Is experience of a police officer a factor in gun violence?

7) Is location a factor in gun violence (urban, rural, region, etc.)?

8) Are age, gender, and race of the shooter a factor in fatality ratio?

9) Are there predictive factors that lead to incidents in which police use deadly force?

10) How much mental illness of the subject and the officer played a role in police shootings?

11) What is the correlation between the types of aggression (altercation, physical attack, brandishing a weapon and firing a gun) shown by the subject and the officer's decision making?

12) How many of the police shootings resulted in lawsuits? How much American taxpayers are impacted by such litigations?

# Police Patrol Strategies to Enhance Homicide & Serious Crime Investigations

James F. Albrecht

## **ABSTRACT**

*Prior research has revealed that the effective response of patrol resources to serious criminal incidents will enhance the likelihood of clearing the case through the identification and arrest of the suspect(s). Certain measures by initially responding patrol personnel and preliminary field investigators can significantly assist criminal case investigators in their path to solve the crime. Critical steps include analyzing homicide, crime and suicide statistics and identifying local trends and patterns and deploying patrol and enforcement resources effectively; assessing the size and scope of the crime scene and properly securing the perimeter; evaluating the background and traits of the crime victim to determine if there are indications toward motive, intent and the potential for retaliation; examining potential evidence available through video surveillance and other forms of technology; taking steps to immediately identify the modus operandi used in order to potentially tie the incident to other similar cases; conducting a thorough canvass to identify prospective witnesses, vehicles in vicinity, and other victims; considering the timely mobilization of local and regional police resources to conduct a more thorough search of the immediate vicinity and to respond to escape options including transportation hubs and nearby buildings (to conduct vertical patrols); expeditiously collaborating with the local prosecutor to increase the speed of search and arrest warrant issuance; determining the need for the deployment of a team or task force to apprehend an identified suspect; and other tactical options. All in all, if sufficient commitment and effort is initially made at homicide and serious crime scenes, the probability for suspect identification and arrest will be enhanced.*

Key Words: Police; Criminal Investigation; Homicide; Crime Analysis

## **INTRODUCTION**

Research has consistently supported the challenges inherent in identifying and apprehending suspects following the commission of a crime (Greenwood & Petersilia, 1975; Greenwood et al, 1975; Carter and Carter, 2016). In addition, Chaiken and colleagues (1976) indicated that the likelihood of suspect apprehension and case clearance strongly relies on the actions of the initial responding police patrol personnel. One common

discovery was that the proper collection of evidence and detailed information shortly after the commission of a crime will dramatically impact case clearance rates. It is therefore critical that police personnel initially responding, who in almost all cases will be patrol resources, take effective measures to ensure that proper crime scene security protocols are maintained and that detailed notes are recorded regarding potential witnesses, any interviews, and any other relevant evidence identified. In addition, Schroeder and White (2009) demonstrated that effective and properly conducted interviews more than doubled the odds of homicide case clearance, so it is imperative that any statements and notes are properly preserved, including those documented by initially responding patrol personnel, and passed on to assigned criminal investigators.

Solving murder, serious assault and violent crime cases are generally viewed as the responsibility of criminal detectives and investigators. Often investigative resources rely on the collection of information, intelligence and evidence, but they do so routinely while engaged in reactionary steps, i.e. criminal investigators are called to the scene by patrol personnel to pick up and continue the investigation. There are, however, proven methods that patrol personnel can take that will enhance the success of the investigation process. Just as important, when accurate crime documentation and analysis is undertaken, there is the potential to deter violent and criminal interactions from taking place in the first place. Clearly the prevention of crime and homicide should be the primary goal of law enforcement agencies, and acknowledged and successful proactive measures should be implemented. Some of the many effective strategies that can enhance homicide and violent crime investigations and deter future criminality will be outlined in detail below.

## **PRACTICAL RECOMMENDATIONS: POLICE PATROL PRACTICES**

There are many measures that police patrol personnel can undertake that will assist criminal investigators in solving serious and violent crime, that will enhance the collection of relevant evidence, that could enhance the apprehension of a suspect shortly after the commission of that crime, and that has the potential to prevent future serious criminal actions from taking place after the commission of a homicide or other violent crime. A list of many of these options includes:

1) Analyzing homicide, crime and suicide statistics and identifying local trends and patterns and deploying patrol and enforcement resources effectively: Accurate and timely crime information should be aligned with available criminal intelligence in order to proactively deploy patrol, enforcement and investigatory resources to crime and violence hot spots (Albrecht, 2012).

2) Determining if a predictive policing analysis or protocol is warranted to deter future acts of violence: Many agencies, e.g. Chicago Police Department and Richmond Police Department, have implemented comprehensive analytical efforts to identify both locations and individuals who may be susceptible to future acts of violence, particularly firearms related. These predictive models, which have proven successful in deterring shootings and recovering firearms in many jurisdictions, will continue to receive considerable interest as a proven crime prevention option (Perry et al, 2013).

3) Studying the relationship between the victim and suspect to determine the potential for future forms of retaliation: Many gang, organized crime and violence based on territoriality or personal affront may indicate that violent actions, including shootings and murders, may take place in the near future. Appropriate patrol, enforcement, investigatory and interagency resources can be deployed to prevent violent confrontations from taking place.

4) Assessing the size and scope of the crime scene and properly securing the perimeter: Failure to appropriately evaluate the potential relevance of evidence and ensure that only necessary investigatory and crime scene personnel enter the site may lead to contamination or loss of valuable clues needed to solve the crime (National Forensic Science Technology Center, 2013).

5) Evaluating the background and traits of the crime victim to determine if there are indications toward motive and intent: Patrol personnel should identify and document all persons in the vicinity before, during and after the criminal incident so that detailed investigative interviewing can take place. Efforts should be made to identify family members and associates that can provide critical information about possible motive and intent.

6) Examining potential evidence available through video surveillance and other forms of technology: Both patrol and investigatory personnel should identify video surveillance sources, including cell phone footage, which

may have recorded the victim and/or suspects before, during and after the commission of the criminal incident.

7) Taking steps to immediately identify the modus operandi used in order to potentially tie the incident to other similar cases: The specific modus operandi used should be identified in an effort to tie the criminal incident to other similar cases that may have resulted in the collection of more noteworthy evidence that can be better used to identify a criminal suspect.

8) Conducting a thorough canvass to identify prospective witnesses, vehicles in vicinity, and other victims: The initially responding patrol and investigatory personnel must conduct a methodical canvass; the size and scope will be dictated by time of day, type of location, population density, traffic congestion, type of crime, and ready availability of apparent evidence at the crime scene or previously obtained from the victim, witness or bystanders. Video-recording persons and vehicles in the immediate vicinity, if permissible by law, may prove helpful when obvious leads fail to quickly identify the perpetrator.

9) Considering the timely mobilization of local and regional police resources to conduct a more thorough search of the immediate vicinity and to respond to escape options including transportation hubs and nearby buildings (to conduct vertical patrols): If there is information that a suspect may still be in the vicinity or that a possible escape vehicle has been identified, a police supervisor must decide whether it may be prudent to conduct a systematic grid search by requesting needed resources, to direct



personnel to nearby transportation hubs to look for known suspects or those matching suspect description, to request police K9 or other search resources, or to target the deployment of police vehicles to intersections or highways that may have been used for vehicular escape when information is available of the perpetrator's vehicle or of the description of possible getaway vehicle.

10) Determining if a proactive approach to collecting critical intelligence regarding the crime will lead to swifter identification and apprehension of the perpetrator: Patrol personnel can intensify enforcement actions in the vicinity of a serious criminal event and participate in a two-stage interview process with arrested individuals. The first step would involve post-arrest interviews by the arresting officer regarding suspect knowledge on general criminal events both locally and generally (e.g. information about drug or weapons dealers); the second stage would involve criminal investigators assigned to specific cases who would query arrested individuals on their knowledge about intelligence related to specific cases currently open (but not necessarily related to the offenses that they had been arrested for). These tactics have proven effective in crime clearance and intelligence gathering in many jurisdictions (Albrecht, 2012).

11) Expeditiously collaborating with the local prosecutor to increase the speed of search and arrest warrant issuance: In cases involving homicides or other serious crimes, it may be sagacious to contact the local prosecutor at the earliest stages of the investigatory response so that needed search and

arrest warrants can be procured in a timely fashion so as not to cause delays in obtaining evidence, searching premises or detaining suspects.

12) Determining the need for the deployment of a team or task force to apprehend an identified suspect: In cases where there has been a serious crime, sensationalized event, or series of similar crimes, particularly if violent in nature, the agency head should determine if the development of a dedicated team or task force would enhance the likelihood that the suspect is quickly identified, located and apprehended. This task force may span organizational divisions and units, may be multiagency or may include agencies in other jurisdictions, if warranted.

Clearly this list is not intended to be all inclusive, but consideration of the above options should enhance the likelihood of suspect identification and apprehension.

## **CONCLUSION**

The obvious preference would be to implement strategies that would deter and prevent serious and violent criminal events from occurring in the first place. However, when proactive tactics are not effective in this regard, then appropriate resources and measures must be deployed and undertaken to identify, locate and apprehend a criminal suspect as soon as possible and before another criminal episode involving the perpetrator/suspect can take place. The steps outlined above should assist organizations in accomplishing this vital goal, and it is obvious that the initial steps taken by patrol personnel at the scene of a homicide, shooting or other serious crime are critical to achieving case clearance.

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# Examining the 'Ferguson Effect:' Statistically Supported or Ideological Speculation

James F. Albrecht

## ABSTRACT

***Homicide rates have dramatically increased nationally since 2014 and there is speculation that this upsurge is the result of a phenomenon generally referred to as the “Ferguson Effect.” The “Ferguson Effect” involves ‘de-policing’ or a decline in proactive enforcement by law enforcement personnel in cities and regions overwhelmingly impacted by over-sensationalized incidents in which police officers have been excessively criticized for their enforcement activity, and specifically events that have involved the shooting by police of non-white criminal suspects. Two police departments that have come under extreme scrutiny following sensationalized police-suspect encounters since 2013, i.e. the Baltimore Police Department and the Chicago Police Department, also align with two cities that have displayed discernible increases in murder and serious crime rates following those events. Other jurisdictions have exhibited short term homicide and crime increases following similar incidents. From a police practitioner perspective, this transition from enthusiastic and proactive law enforcement to mainly reactive response appears to reflect a common sense reaction to threats to job security and both professional and personal reputation. The increase in murder and violence rates across the United States since 2013 will be closely analyzed with an effort particularly made to determine the validity of the impact of the “Ferguson Effect” on American policing strategies, from both individual and organizational perspectives.***

KEY WORDS: Police; Police Shootings; Homicide; Police Brutality; Racial Profiling

## INTRODUCTION

Following the sensationalized reporting of two police confrontations that resulted in the death of the criminal suspects in 2014 (i.e. the shooting of robbery suspect Michael Brown in Ferguson, Missouri and the in-custody death of suspect Eric Garner in Staten Island, New York), which drew negative criticism on the police across the United States, there appears to be a transition away from the successful, proactive and enforcement-oriented practices in some jurisdictions that many contribute to dramatic decline in serious and violent crime nationally and locally in the United States since the

mid-1990s. This strategic withdrawal may be a critical factor in the rise in murder and homicide rates noted nationally and in those jurisdictions directly impacted by overwhelming condemnation of the police since 2013. It has been proposed that this phenomenon is known as the “Ferguson Effect,” following the shooting of criminal suspect involved in a violent confrontation with a police officer in Ferguson, Missouri in August 2014. The local and regional police were thereafter placed under extreme criticism following the release of inaccurate information regarding the incident posted on social media that was immediately sensationalized by traditional media. This resulted in local demonstrations and violent rioting. The matter was complicated by statements made by national and local government leaders, most notably the United States President Barack Obama and US Attorney General Eric Holder, which continued the scrutiny of the Ferguson Police Department and of law enforcement across the United States in general. It has been additionally theorized that this overwhelming negative criticism of the police and allegations of racially disparate conduct by the police, particularly as it relates to police shootings involving African-American/Black criminal suspects, has driven police officers across the United States, and more so in jurisdictions directly targeted by that scrutiny, to restrict the use of many of the proactive policing practices that have reportedly contributed dramatically to the notable decline in murder, violence and other serious crimes. It is speculated that many of these police officers may be reducing their crime fighting efforts individually, and perhaps not as the result of organizational policy or directive, in an effort to avoid criticism, disciplinary action, criminal prosecution, civil litigation or job termination. One of the noticeable results has been an increase in murder rates across the United States since 2014. It must, however, be determined if there is a causal or direct link between the “Ferguson Effect” and increases in murder rates locally and nationally since 2014.

## **ANALYSIS**

Police use or threat of force in the United States is rare and accounts for no more than 4% of the interactions between the police and the public from 2002 through 2011 (Hyland, Langton and Davis, 2015). However, this statistic includes not only the use of firearms, physical force, non-lethal weapons, but also verbal directive and threats that force could be used. It is also apparent that the use of a firearm by the police is considerably rare. The latest estimates of deaths of criminal suspects involving police action involving the use of a firearm has been approximated to be between 900 and 1000 per year, whereas it has been estimated that police in America engage in more than 40 million contacts with the public each year (Eith and Durose, 2011). As such, it is obvious that police-involved shootings and deaths occur rarely, and when compared to deaths resulting from criminal action across the United States are minimal in scope. Yet, if one relied on the attention placed on the issue by traditional and social media and by overzealous politicians, members of the general public could easily conclude (and many unfortunately have decided) that police officers across America routinely engage in the use of excessive force against criminal suspects and members of the general public, and more so target this “brutality” at members of minority communities, particularly African-Americans/Blacks and Hispanics. This unfortunate perception exists, even when data and evidence indicate otherwise, and even when the criminal justice process in almost

all cases has decided that the police officers involved in such actions had acted lawfully and with legal justification. From 2005 through 2017, given the estimate of 13,000 deaths at the hands of the police in the United States over that 13 year period, only 82 police officers faced criminal charges with only 29 of them resulting in a conviction, often for manslaughter or criminally negligent homicide charges (Stinson, 2017).

Police officers are members of a distinct sub-culture, one that is generally suspicious of the media, politicians and the general public. This has traditionally resulted in an “us v. them” mentality, in which police officers of all ranks and even across law enforcement agencies tend to socialize, both on and off-duty, mainly with fellow colleagues as there is general distrust in those outside the policing circle. Numerous research studies have revealed that one of the most important reasons cited by police officers for joining the police department was the opportunity to help people (Tarnig et al., 2001; White, Cooper, Saunders, & Raganella, 2010; Wu, Sun, & Cretacci, 2009; Raganella & White, 2004; Foley, Guarneri & Kelly, 2008; Meagher & Yentes, 1986; Hageman, 1979; Lester, 1983). Yet their perceptions, particularly later in their careers, reveal frustration at the negative public opinions of the police, which they view as being inaccurate and unfair, particularly given their sense of commitment to the communities that they serve (Morin et al, 2017).

Considerable research has been conducted on police officer sentiment, particularly since the aforementioned police incidents of 2014 (Morin et al, 2017). Since 2014, police officers across the United States have expressed that members of the public do not understand the risks and challenges of the police (86% of police officers); that they generally feel frustrated with their work (51% of cops); that they worry about their safety (86%); that they have been verbally abused by a member of the community over the last month (67%); that they feel that their respective agency does not possess a sufficient number of officers to police the community (86%); that they have become less willing to engage in stops of criminal suspects (more than 60%); that they have become more reluctant to use force, even when it is appropriate (more than 70%); that fatal encounters between African-Americans/Blacks and the police are isolated incidents (67%); that protests over deaths of African-American Black suspects by police is due to long-standing bias against the police (94%); that the vast majority of them (74%) are satisfied with their jobs; that almost all (96%) are strongly committed to the success of their agency; that they feel that they have a good relationship with different ethnic groups within the community, e.g. with whites (91%), with African-Americans/Blacks (56%), with Hispanics (70%) and with Asians (88%); and that they have become more callous since starting their police careers (56%). One could conclude that most police officers are content with their occupations, their agencies and their performance, but are overwhelmingly suspicious of certain members of their community, particularly African-Americans/Blacks. These reservations appear to have caused many police officers, particularly in larger metropolitan police departments to shun situations that may result in confrontation, and these actions include the avoidance of police-suspect encounters and arrests (Morin et al, 2017), which have been critical in the crime and violence prevention strategies that have supported the dramatic crime decline in most American cities since 1995 (Albrecht, 2012).

It is therefore hypothesized that the reduction in use of proactive police strategies by disenchanted police officers has led to the increase in homicides in large American cities during 2015 and 2016. This appears to be the case in both Chicago and Baltimore, as there is a correlation between a dramatic drop in arrests and notable increases in murders in those two jurisdictions (Rosenfield et al, 2017). This aversion and avoidance of police-suspect interaction in Chicago and Baltimore followed two high profile criminal prosecutions of police officers that involved the deaths of African-American/Black criminal suspects. As the negative attention being focused at the police has not been limited to Ferguson, New York, Baltimore or Chicago, and given the attention regularly granted to the issue by national and local politicians and traditional media, it is possible that this perceived “anti-police sentiment” may have affected police officers more broadly, who have become more concerned with career survival than in organizational performance and success. There appears to be substantial anecdotal and statistical support for this proposition (MacDonald, 2016).

## **CONCLUSION**

Following the sensationalized deaths of a number of African-American/Black criminal suspects at the hands of the police in the United States during and after 2014, there has been a notable increase in murder and homicide rates both nationally and in many of the cities that have received the focus of community, political and media attention. It does appear that police officers, in response to not only public scrutiny, but also fear of criminal prosecution and job termination, may have intentionally limited their interactions with suspected criminals, particularly in high crime, minority communities. This drawback from the highly touted, proactive and enforcement-oriented actions by the police that appear to be correlated with declines in serious and violent crime, both locally and nationally, may at least partially explain the sharp increase in murder and violent crime noted in the United States and in many large American cities in 2015 and 2016. This hypothesis and other potential explanations will be analyzed and articulated in further detail.

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# Bridging the Gap between Genocide and Serial Murder Research

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Genocide and serial murder researchers often work in different fields using diverse theoretical models. The purpose of this presentation is to examine the application of Lonnie Athens' violentization theory to genocide perpetrators and serial murderers while making appropriate adjustments to analyzing micro and macro level variables. Violentization theory has rarely been used in genocide or serial murder research, yet provides a unique perspective applicable to both.

In this presentation, I will address the following questions:

What do genocide perpetrators and serial killer/mass murderers have in common and how do they differ?

Is it possible to integrate the violentization theory and research in these separate fields?

Will merging violentization theory into these areas lead to a new model and understanding?

Violentization theory traces the process of how people become violent perpetrators. The five stages of the violentization process include (Athens, 2015a): brutalization (observing violence and learning how to engage in violent behavior), defiance (developing a supportive belief system for the use of violence), violent dominance engagements (participating in violent behavior and

testing out the results), virulency (defining oneself as a violent person), and violent predation (extreme violent behavior).

Athens (1994) also identified the phantom community as a sounding board (internal dialogue) that people use to make sense of themselves and situations. In cases of genocide, the phantom community is the voice that allows, encourages, and supports hatred and violence toward a constructed enemy. Athens also pointed out that the person's self-image changes when going through the violentization process.

In his analysis of group serial killers, Hickey (2016) points out that the power of the spectators and participants increases as they engage in violent behaviors. Group violence also increases group cohesion and encourages more predatory violent behavior.

More recently, Athens (2015b) has suggested that researchers take a closer look at how groups maintain their domination over others through various forms of social control. Groups engage in acts designed to increase their social status with the primary motivating factor of creating a new dominance order. Individuals and groups involved in genocides and serial murder demonstrate their superiority through violent predatory behaviors. According to Athens (2015b), dominance displays "the implicit or explicit creation of a formal or informal dominance order among different individuals and groups, which may change, however slowly or quickly over time" (p. 127).

Several areas of divergence between genocide perpetrators and serial murderers include the context of use of power and control, self-identification,

backstage and frontstage violent behaviors, and other interactional and structural variables, such as perpetrator demographics.

### Case Studies

#### Gary Ridgway: The Green River Killer

Gary Ridgway became a serial killer who raped and killed prostitutes. His childhood problems include bed wetting, humiliation from his mother, sexually inappropriate behavior by his mother, and sexual feelings toward his mother while also hating her (Guillen, 2007). Ridgway also engaged in animal cruelty, set fires, and abused others (Levi-Minzi & Shields, 2007). As an adult, he hired prostitutes, stalked women, and engaged in necrophilia with his victims (Levi-Minzi & Shields; Prothero, 2006; Reichert, 2004). His family life included several marriages and a son. He also had long-term employment. It appears that he went through the violentization process throughout his childhood and teenage years ending in the violent predation stage.

#### Dusko Tadic: Genocide in the Former Yugoslavia

Dusko Tadic was convicted of murder, torture or inhumane treatment, and willfully causing great suffering or serious injury to body or health during the Bosnian genocide (Prosecutor v. Dusko Tadic, 1997). Although he pleaded not guilty, he was sentenced to 20 years imprisonment.

During the conflict, he became more nationalized, displayed communication that indicated hatred toward other groups, presented symbols of power and control, and displayed characteristics of hypermasculinity (Winton & Unlu, 2008). His religiosity also increased.

Witnesses reported that Tadic and his colleagues engaged in extreme violence toward the prisoners in one of the prison camps. It appears that Tadic went through the all stages of the violentization process during the genocide culminating in violent predation. In contrast to serial killers, he became a political leader in an environment that supported torture, humiliation, and mass and serial murder in a group setting.

### Summary and Conclusions

It appears that these two individuals went through the violentization process in very different ways. One case involved an individual acting by himself while the other case occurred during a genocide within groups of people. Ridgway had to keep his behavior secret from others while Tadic was able to work within large and small groups that were encouraged to engage in violence. Tadic was viewed as a leader and his behavior was much more public than Ridgway.

While both cases demonstrate a process of violentization, more research is needed to determine if it possible to compare and contrast serial killers and genocide perpetrators using violentization theory across various violent scenarios. In addition, this type of research brings new questions to the use of life course developmental theories of violence and crime.

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# Is Sexually Motivated Serial Murder a Compulsion, Deviant Leisure, or Both? Revisiting the Case of Ted Bundy

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## **Introduction**

Although there are important sociological factors associated with serial homicide behavior (see Forsyth, 2015; Haggerty, 2009; Leyton, 2005), much of serial homicide research has been dominated by neuropsychiatric and psychological investigations.

Studies have shown that serial homicide offenders are characterized by higher than normal rates of antisocial and narcissistic traits (i.e., Meloy, 2000; Miller, 2014); trauma and neglect during early development (Hickey, 2016); and Autism Spectrum Disorders (ASD) and head injuries (Allely, et al., 2016). Although it may seem obvious that all serial homicide offenders would be psychopaths, this assumption is not supported by existing evidence. To the contrary, there appears to be considerable diversity in the psychological profiles of serial murderers (Culhane, et al., 2014, 2016, 2017).

Scholars have recently begun to consider how intrinsically-motivated serial homicide may be planned, structured, and experienced as different forms of deviant leisure experience (Rojek, 1999; Williams, 2017; Williams & Walker, 2006). Leisure, which by definition must be intrinsically motivated and somewhat freely chosen, is consistent with established definitions of serial homicide (Williams, 2017). However, it may be argued that some cases of serial homicide may be compulsory, which appears to contradict the essential leisure criterion of choice. Nevertheless, in considering the thorny issue of personal choice across multiple behaviors and contexts (excluding homicide),

scholars have recognized that choice is not a dichotomous variable, nor is it stable for a particular person across time and place, but is somewhat constrained by a host of biological, psychological, and structural variables and contexts. Leisure, then, may be understood as being uncoerced activity, which rightfully acknowledges important constraints on autonomy yet rejects a strict determinism (Stebbins, 2005). Such conceptualization is, of course, also consistent with philosophical and theoretical foundations of societal justice. Evaluating the reasonable degree of choice involved in cases of intrinsically-motivated serial homicide behavior remains difficult, however, and seems to range on a continuum with leisure at one end (reflecting more choice) and compulsion at the other end (less choice).

### **Methods**

In an effort to gain insights into issues surrounding compulsion and leisure, the case of Ted Bundy was revisited. Bundy's homicidal activities are often thought to be largely compulsory, thus if so, leisure, theoretically, perhaps may be less relevant to his homicidal processes than for other offenders. To explore this possibility, an open-ended content analysis of transcripts of interviews with Bundy conducted by Michaud and Aynesworth (2000) was performed to identify any potential leisure descriptions or processes. Additionally, available data from various records and documents on 17 victim cases were also analyzed and coded via the *Homicide Profiling Index version 4* (HPIv4, Sorochinsky & Salfati, 2010), along with focused coding primarily derived from leisure categories of the classic *Leisure Behavior Inventory* (Ragheb, 1980). Sex as leisure was added as an additional LBI leisure possibility, since this category was overlooked at the time the LBI was developed. By comparing the interview analysis to potential forensic



behavioral characteristics and leisure patterns and associations identified within cases via HBIv4 and LBI coding, it was possible to identify how leisure experiences, if present, might function in the overall homicide behavioral process of Ted Bundy.

### **Findings**

In describing his behavior, Bundy used neutralizations and cognitive distortions to avoid taking responsibility. His explanations, directly and indirectly, suggested an uncontrollable aspect to committing his crimes. However, there were also significant portions of interviews that illustrated conscious and purposeful leisure choices, including specific content reflecting SLP (particularly serious leisure attributes of his murders and also his comparing murder to legitimate serious leisure activities); leisure constraints and negotiation theories (navigating intrapersonal constraints); leisure substitutability (intentionally committing a lesser crime than murder, specifically rape, but with similar psychological benefits when committing murder was too risky); role of legitimate leisure during cooling off periods; and leisure continuity (youth leisure interests were later incorporated into the murder-as-leisure homicide process).

Sex as leisure was the most common LBI leisure category and was salient in 14 of the 17 cases. A range of specific HPIv4 sexual behaviors were observed, some pre-mortem and others post-mortem. HPIv4 behaviors occurred within the outdoor activity LBI category in seven cases. In at least two cases, outdoor activities were related to the timing of murderers (pre-planning). Bundy loved the outdoors as a youth, including skiing, and in one case he lured a victim by asking her to help put ski boots in his car. Not surprisingly, outdoor activities pertained to crime cover-up (post-planning) in all seven

cases. There are numerous additional homicide victims in which Bundy has admitted to, or is suspected of, killing, and outdoor leisure activities broadly applies to most of them.

In his interviews, Bundy stated that as a youth he loved to listen to radio talk shows, and he would interact (while listening by himself) with guests on the programs. This youth behavior reflects the LBI categories of mass media and hobbies (acting). In at least six cases, Bundy skillfully used acting and role-playing to lure victims (HPIv4 offender-victim interaction behaviors). These acting skills, well-rehearsed as a youth, were valuable in both luring victims and avoiding suspicion. Also regarding hobby behavior (LBI) and offender-victim interaction characteristics (HPIv4), Bundy kept several victims' heads for a time as trophies (collecting); and in one case he washed the victim's hair, painted her nails, and re-applied eye make-up. His motive for such postmortem behavior is not entirely clear, but partly may have served as a way for him to practice altering his own appearance to avoid detection.

### **Conclusion**

Although many serial homicide offenders, such as Bundy, are commonly thought to kill largely as the result of a psychological compulsion, there remain substantial theoretical and conceptual issues regarding the actual degree of autonomy that offenders have in committing their crimes. From a leisure science perspective, many serial homicide offenders, similar to the execution of complex behavioral processes within any individual or population, seem to have particular neurobiological and psychological constraints that restrict, to various degrees, their behavioral choices. Nevertheless, most individuals retain sufficient capability, even if considerably limited, to make meaningful choices regarding desired leisure experiences. It is possible that specific offenders who

commit intrinsically motivated serial murder vary in how their homicidal behavior reflects elements of compulsion and/or leisure. While the present findings from the infamous case of Ted Bundy are provocative, more exploratory research is warranted.

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**Note:** A full-length version of this study is currently under review for publication in a peer-reviewed journal.

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# Dyadic Death: The Role of Gender on Criminal Sentencing for Serial Killer Teams

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## **ABSTRACT**

Research has shown that female offenders typically receive differential treatment in the criminal justice system in comparison to their male counterparts, even for extreme crimes like murder. According to the “leniency hypothesis,” women who embody traditional stereotypes, display deferential behavior, and do not challenge the gender hierarchy are punished less harshly than men for the same crimes. The “evil woman” corollary, on the other hand, contends that women whose crimes violate gender norms are treated more severely than men, as they are punished for their legal and social deviance. While the effect of gender is often confounded with other mitigating and aggravating factors in the study of lesser crimes, its impact is clearest in the most extreme cases, those of male and female partner serial killers who receive different punishments for the same exact crimes. Comparisons of sentencing outcomes between opposite- and same-sex pairs essentially allow males to serve as the control group for their female partners. Although it is widely assumed that partnership gender type affects sentence severity for serial murder teams, all evidence is based on a handful of non-representative case studies. This research uses the Actor-Partner Interdependence Model (APIM) to compare the sentences of serial killer partners by gender combination and within their specific dyads to determine if gender has an effect on leniency for even the most extreme crimes.

## BACKGROUND

Two competing theories examine the effect of gender on sentencing in the criminal justice system, including the leniency hypothesis and the “evil woman” corollary. Based on chivalry, paternalism, and benevolent sexism, the leniency hypothesis asserts that (mostly male) judges may act upon their subconscious acceptance of feminine stereotypes, ultimately treating women more leniently in a misguided effort to protect these delicate, wayward creatures (Nagel and Johnson, 1994; Daly 1989; Steffensmeier, 1980; Nagel and Hagan, 1983). As late as 1998, the FBI’s Behavioral Sciences Unit (BSU) own Robert Ressler asserted “there are no female serial killers” (qtd. in Bonn 2014) and up until 2004 the only BSU category for females was “compliant victim” who acted based on “straightforward male coercion” (qtd. in Hickey, 2010). The relatively light sentences of notorious murderesses like Caril Ann Fugate and Karla Homolka in comparison to those of their male partners are often cited as examples.

In contrast, previous work has shown that the leniency effect only applies to women who embody traditional stereotypes, display deferential behavior towards men, and do not challenge the gender hierarchy (Herzog and Oreg, 2008). This has led Nagel and Hagan (1983) to propose the “evil woman” corollary to the leniency hypothesis: women whose crimes violate gender norms and stereotypes are treated *more harshly* than men, as they are punished for their legal and social deviance. For example, Myra Hindley and Ian Brady were both sentenced to life imprisonment for the Moors Murders, yet Hindley is by far the most reviled by Britain as their victims were all young children between ten and seventeen years of age. Hindley’s rejection of the mother role, in combination with Brady’s later diagnosis as a paranoid schizophrenic, likely led to her

overt vilification. Similarly, Rosemary West received life imprisonment in spite of her horrific upbringing, most likely as a result of her husband's suicide before trial and the fact that she participated in the murder of her own daughter and stepdaughter.

Unfortunately, only one study has examined the effect of gender on sentencing for multiple murderers. Although Gurian (2015) found that the odds of being sentenced to death are decreased by 62% for females in comparison to male serial killers, she was unable to control for different aspects of the crimes themselves, which may confound the results. The current study tests the competing theories of the leniency hypothesis and "evil woman" corollary by comparing the sentences of male and female partnered multiple murderers within their dyads to determine if gender has an effect on leniency independent of the crime itself. Comparing same-sex and mixed-sex pairs controls for all aspects of the crime, essentially allowing male partners to serve as the control group for their female compatriots.

## **METHODS**

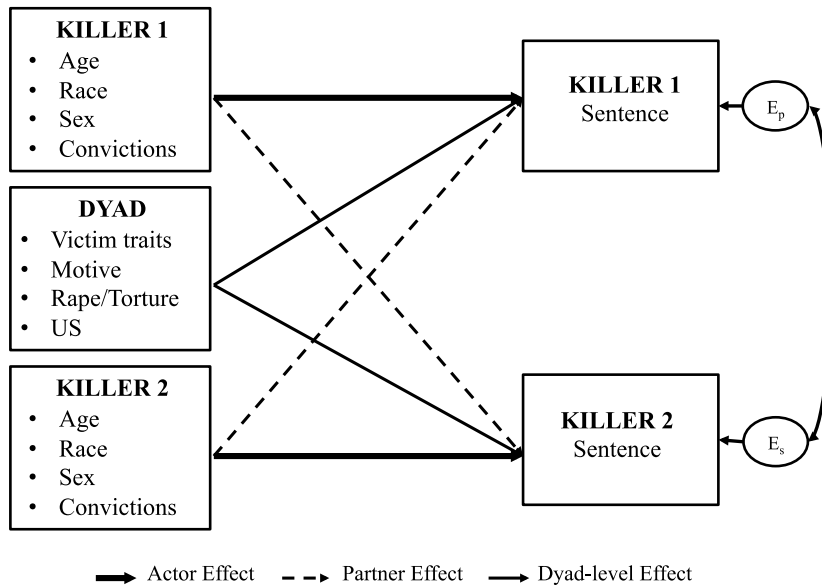
Offending within pairs violates the assumption of independence; as the two committed the same crimes together, information on one of the killers is correlated with information on his or her partner. Treating interdependent pairs as independent individuals results in inaccurate test statistics and degrees of freedom as well as biased p-values (Cook and Kenny, 2005). The Actor-Partner Interdependence Model (APIM) allows for the analysis of dyadic data by simultaneously estimating the effect of a person's own variable (actor effect), the effect of same variable but from the partner (partner effect), and dyad-level predictors on the actor's outcome variable, all while controlling for statistical nonindependence. All individuals serve as both actors and

partners. Generalized estimating equations (GEE) is utilized to estimate an APIM logistic regression model with a binary outcome as it allows for a negative intraclass correlation (ICC), unlike other generalized linear mixed models (Loeys et al., 2014).

- **Data and Sample:** Information on all offenders was derived from the Radford University/Florida Gulf Coast University Serial Killer Database (Aamodt, 2017). The sample includes 150 pairs of offenders who killed at least two victims together starting in the 1950s or later, including 100 male-male pairs, 46 female-male pairs, and 4 female-female pairs. Approximately 90% of the sample was from the United States.
- **Dependent variable:** Sentence severity is dichotomized into most severe punishment (death in areas where the death penalty is available or life without parole in areas without the death penalty) vs. less severe punishment (anything else).
- **Independent variables:** Actor and partner age, race, sex, and number of murder convictions were all included at the individual level. Dyad-level predictors included percentage of victims that were female, white, and under the age of 18, as well as nationality (US vs. international) and whether the pair had raped, tortured, or killed for enjoyment.



**Figure 1: The APIM of Sentence Severity for Serial Killing Pairs**



## RESULTS

Actor sex, actor and partner age, actor and partner convictions, and victim race all significantly impact sentence severity for serial killing pairs ( $p < 0.05$ ). Partner sex, actor and partner race, victim sex and age, torture and rape, motive, and nationality do not exhibit significant effects. The interaction between actor and partner sex is also nonsignificant. The odds of receiving a harsher sentence increase by 139.6% for male actors in comparison to females. The odds of receiving a harsher sentence increase by 3.5% for every one-year increase in actor age, and decrease by 2.9% every one-year increase in partner age. The odds of receiving a harsher sentence increase by 67.3% for every additional murder conviction for the actor, and decrease by 24.9% for every additional murder conviction for the partner. The odds of receiving a harsher sentence

increase by 1.0% for every one percent increase in the percentage of the actor's victims that were white.

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# Examining Lethal and Non-Lethal Outcomes of Child Abuse and Neglect Cases

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Common issues with research on child homicide include unintentional misclassification of circumstances, such as when the cause of death is incorrectly determined to be from natural causes or some form of an accident. Also, the lack of consistency across various sources, such as in-depth, location-specific case studies versus ED/Hospital reports versus UCR or NIBRS data is also a concern. The present study utilizes data from National Child Abuse and Neglect Data System (NCANDS), collected by the U.S. Department of Health and Human Services. This data is nationally representative, including all 50 states, the District of Columbia, and Puerto Rico. The analytical approach includes a comparison of factors related to lethal and non-lethal outcomes on abuse and neglect cases reported to NCANDS. Specific attention will be given to offender, victim, incident, and environmental (e.g. domestic violence, substance abuse, financial difficulties in home) characteristics. Findings will be discussed in relation to the dynamics of outcomes, particularly in terms of risk factors and prevention.

According to the Centers for Disease Control and Prevention (CDC), in 2016 homicide was the fourth leading cause of death in the United States for children (all races and both sexes) ages one through four (CDC, 2016). Even though child homicide is a rare crime in Western societies (Putkonen, Amonc, Eronena, Klier, Almirone, Yourstone Cedarwallf, Weizmann-Heneliusa, 2011), research points out that intentional child murder and child abuse fatalities are severely undercounted (Herman-Giddens, Brown, Verbiest, Carlson, Hooten, Howell, & Butts, 1999; Jason & Andereck, 1983; Overpeck, 2002). This undercount is the result of a number of factors, such as poor documentation, infanticides reported as SIDS deaths, lack of death certificates, unbound corpses, and undocumented births due to pregnancy denial (Herman-Giddens et al., 1999, Spinelli, 2005). Because of underreporting,

accurate data are difficult to obtain and, when data are collected, reporting methods can substantially vary (Alt & Wells, 2010), an issue compounded further by differences across agencies (e.g. law enforcement and social services) in terms of the types and amount of information provided (Ewigman, Kivlahan, and Land, 1993).

Some scholars have suggested that violence towards children is a continuum of violence that ranges from the mildest forms, such as neglect or physical punishment, to the most severe forms, such as murder. As is well-known among homicide researchers: “The difference between assault and homicide is often as simple as luck, aim, or the presence/absence of a weapon” (Gelles, 1991, p. 60). Statistics also show that up to one in five child homicides occur in the context of domestic violence in the home (Jaffe, Campbell, Hamilton, & Juodis, 2012). Mayhew (2007) claims that most child homicides result from frustration and lack of appropriate expectations of children. Common triggers include crying, feeding, and toilet training and feeding. In addition, children four and younger are the most likely victims of child homicide caused by maltreatment and this age category accounts for over 75 percent of child fatalities due to abuse and neglect (Child Welfare Information Gateway, 2015)

The previous discussion highlights the connection between abuse/neglect and homicide of children, be it in terms of history of abuse or as a factor related to the fatal incident itself. Our research seeks to address this issue using child protective services data that takes into account victim, offender, and situational/environmental factors. In particular, we are interested in exploring the dynamics of prior reports of neglect/abuse among child fatality incidents. According to data utilized in the present study, and as will be discussed, approximately thirty percent of child fatalities have a prior history of abuse/neglect (Children’s Bureau, 2018).

*The National Child Abuse and Neglect Data System (NCANDS)*

Given the previously mentioned issues related to the undercount of child homicides, and because research also suggests a link between contextual factors and maltreatment/abuse with fatal outcomes, our research seeks to utilize the National

Child Abuse and Neglect Data System (NCANDS) to explore more fully these factors. NCANDS is the result of 1988 amendments to the Child Abuse Prevention and Treatment Act, which mandated compilation and analysis of child neglect/maltreatment/abuse information. Beginning in 1990, case-level data for each state (plus the District of Columbia and Puerto Rico) have been collected from reports of child protective services (CPS) and from other agencies. Referrals to CPS are typically made by professionals, such as educators, social service personnel, and by law enforcement (Children's Bureau, 2018). The NCANDS dataset is publicly available. The National Data Archive on Child Abuse and Neglect, at Cornell University in Ithaca, New York is where the data is kept. The data is released upon receipt of an application, license agreement, and approved/exempt/expedited finding from the researchers' institutional review board. These steps were completed.

#### *Preliminary Findings*

We examined the data for 2016. The following percentages were rounded and may not total 100%. In 2016, there were 4,191,742 children in database. Of those, 812,902 had substantiated cases. From the substantiated cases, there were 1,447 child deaths. The majority of fatal cases were male (59%). Consistent with other studies, the majority of children were young: 643 (44%) were less than one, 204 (14%) were one year olds, 166 (11%) were two year olds, 100 (7%) were three year olds, 68 (5%) were four year olds, 41 (3%) were five year olds, 36 (2%) were six year old, and the remaining 189 children (13%) were between seven and 18 years old. All remaining age categories had 20 or fewer fatalities with the exception of ten year olds where 27 (2%) children were murdered and 17 year olds where 21 (1%) children were murdered. Concerning the child's race, the majority 878 (61%) were white, followed by 484 (33%) black, and finally 100 (7%) were categorized as other. Only 37 (3%) of the children had a compulsive use of or need for narcotics or alcohol. It is worthy to note that 268, nearly one fifth, of those murdered were prior victims of abuse or maltreatment.

Examining perpetrator characteristics, the majority were female 753 (52%). Concerning age, the majority 463 (32%) were under 26 years old, 313 (22%) were between 26 and 30 years old, 218 (15%) were between 31 and 35 years old, 123 (9%) were between 36 and 40 years old, 69 (5%) were between 41 and 45 years old, 44 (3%) were between 46 and 50 years old, 97 (7%) were 51 years old or older, and 120 (8%) had an unknown age. Similar to other types of murder, child murder appears to be intraracial. Analysis of perpetrator race showed that the majority 814 (56%) were white, followed by 414 (29%) black, and finally 81 (6%) were categorized as other. Unfortunately nearly 10% (138) of perpetrator's race was unknown. There were 222 (15%) perpetrators who had a compulsive use of or need for narcotics or alcohol. When looking at prior abuse, 350 (24%) of perpetrators had substantiated or indicated incidents of child maltreatment. It is important to point out that this prior record does not necessarily mean that the murdered child was the previous victim. It has been indicated that child homicides may occur in the context of domestic violence. The preliminary analysis shows that only 108 (7%) of the children were in a home where domestic violence was noted.

The preliminary analysis presented here examined the substantiated lethal cases within the database. We will be adding analysis to focus on the substantiated nonlethal cases within the database. We will present a comparison of lethal versus nonlethal cases and the risk factors associated with lethality at the annual meeting.

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# Searching for the Stars

by  
Tom McEwen

Significance testing is a common statistical approach in conducting research on homicides. Indeed, variables found to be statistically significant are frequently the main focus of a research article, especially when the significance of a variable is found to be at the  $p < .05$  (\*\*) or  $p < .01$  (\*\*\*) level—two-star and three-star findings. This presentation focuses on controversies surrounding the application and interpretation of p-values that have persisted since their popularization by the statistician R.F. Fisher in the 1920's. Suggestions are made on alternative approaches (e.g., effect size and Bayesian analysis) to complement or replace significance testing.

## History

Significance testing evolved from the concepts and practices developed by the English statistician R.F. Fisher in the 1920's. His idea was to set up a “null hypothesis,” conduct an experiment, and see if the results were consistent with what random chance might produce. That is, assuming that the null hypothesis is true, calculate the chance of getting a result at least as extreme as what was actually observed—a probability that he called the “p-value.” He did not regard it as a definitive test, but rather an informal way to determine whether evidence was significant in a common sense way: Is the result worthy of second look? He offered the following advice:

“If P is between .1 and .9 there is certainly no reason to suspect the hypothesis tested. If it is below .02, it is strongly indicated that the hypothesis fails to account for the whole of the facts. We shall not often be astray if we draw a conventional line at .05, ....”<sup>14</sup>

Note that Fisher did not say a “ $p < .05$  is statistically significant.” However, since he made that statement over 90 years ago, the 5% cut-off point has been used by as a demarcation line indicating some type of importance about a hypothesis, and the term “statistically significant” has entered the lexicon of research. Indeed, in today's world, statistically significant results have become virtually a requirement for research articles.

Criticisms of Fisher's approach appeared almost immediately after the publication of his approach, especially among statisticians who believed it to be too subjective with the choice of a cutoff point for significance. In particular, two statisticians, Jerzy Neyman and Egon Pearson, proposed a different approach focusing on two types of errors that today are commonly called Type I and Type II errors. Acrimony between the two schools of thought are reflected by Neyman calling some of Fisher's work “worse than useless” and Fisher calling Neyman's approach “childish” and “horrifying [for] intellectual freedom in the west.”

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<sup>14</sup> Fisher, R.A., (1934), *Statistical Methods for Research Workers*, p. 82.

Criticisms about the application and interpretation of p-values continue to the present time as illustrated by the following:

“It’s science’s dirtiest secret: The ‘scientific method’ of testing hypotheses by statistical analysis stands on a flimsy foundation.”  
Tom Siegfried (statistician)

“Misleading use of P-values is so easy and automated that, especially when rewarded with publication and funding, it can become addictive. Investigators generating these torrents of P-values should be seen with sympathy as drug addicts in need of rehabilitation that will help them live a better, more meaningful scientific life in the future.” Ioannidis (epidemiologist)

“That [p-test] itself is neither necessary nor sufficient for proving a scientific result.” Stephen Ziliak (economic historian)

“Viewed alone, p-values calculated from a set of numbers and assuming a statistical model are of limited value and frequently are meaningless.” Donald Berry (biostatistician)

“It is a safe bet that people have suffered or died because scientists (and editors, regulators, journalists, and others) have used significance tests to interpret results. The correspondence between results that are statistically significant and those that are truly important is far too low to be useful. Consequently, scientists have embraced and even avidly pursued meaningless differences solely because they are statistically significant, and have ignored important effects because they failed to pass the screen of statistical significance.” Donald Berry

One of the primary problems pointed out by critics comes under the rubric of *flawed analysis*: the search for a statistically significant result that may not actually be there. Under flawed analysis, Simmons, et al. at the University of Pennsylvania have popularized the term *p-hacking* defined as “trying things until you get the desired result—even unconsciously”.<sup>15</sup> Variations of p-hacking include *data-dredging*, *snooping*, *fishing*, *significance chasing*, *research degrees of freedom*, and *double-dipping*. In other words, forget the null hypothesis and let’s see if we can find something that gives us  $p < .05$ .

Here’s a somewhat cynical (hopefully light-hearted) view from some training slides on how to do p-hacking:

1. Stop collecting data once  $p < .05$
  2. Analyze many measures, but report only those with  $p < .05$
- Collect and analyze many conditions, but only report those with  $p < .05$

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<sup>15</sup> Simmons, J.P., Nelson, I.D., Simonshohn U. False-positive psychology: undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, 2011 (November) 22 (11): 1359-66.

Use covariates to get  $p < .05$

Exclude participants to get  $p < .05$

Transform the data to get  $p < .05$

The banner at [fivethirtyeight.com](https://projects.fivethirtyeight.com), a website developed by Nate Silver, pledges that it uses “statistical analysis—hard numbers—to tell compelling stories about politics, sports, science, economics, and culture.” In line with the above criticisms of p-values, it offers an interactive exercise, “Hack Your Way to Scientific Glory,” that allows users to make selections on dependent variables and subpopulations to identify significant ( $p < .05$ ) results.<sup>16</sup> By running the exercise several times with different selections, you eventually will find a model with a significant result.

The main point to be derived from these criticisms is that care should be taken when developing, reporting, and interpreting p-values. While it is impossible to determine the extent to which p-hacking actually occurs, researchers should be especially careful in statistically significant results from analyses of subgroups. P-values are influenced by sample size, effect size, and data spread (e.g., sample variance).

Another problem in social science research generally is replicability—will a result remain significant in a replicated experiment? The experiences of two graduate students, Matt Motyl and Brian A. Nosek, offer a lesson on overdependence with p-values and the importance of replication. From an article discussing their experiences:

Participants from the political left, right, and center ( $N = 1,979$ ) completed a perceptual judgment task in which words were presented in different shades of gray. Participants had to click along a gradient representing grays from near black to near white to select a shade that matched the shade of the word. We calculated accuracy: How close to the actual shade did participants get? The results were stunning. Moderates perceived the shades of gray more accurately than extremists on the left and right ( $p = .01$ ). Our conclusion: Political extremists perceive the world in black and white figuratively and literally.

Unfortunately, a replication with 1,300 subjects, results were completely different and the effect vanished ( $p = .59$  !!). Their reactions:

Our immediate reaction was “why the #&@! did we do a direct replication?” Our failure to replicate does not make definitive the conclusion that the original effect is false, but it raises enough doubt to make reviewers recommend against publishing. Any temptation to ignore the replication and publish the original was squashed only by the fact that our lab mates knew we ran a replication. We were accountable to them. The outcome—a dead or delayed paper—is unfortunate for our career advancement, particularly Motyl’s as he prepared for the job market.

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<sup>16</sup> See <https://projects.fivethirtyeight.com/p-hacking/> accessed on April 10, 2018.

In March 2016, the American Statistical Association (ASA) released a statement on statistical significance and p-values with six principles underlying the proper use and interpretation of the p-value:

P-values can indicate how incompatible the data are with a specified statistical model.

P-values do not measure the probability that the studied hypothesis is true, or the probability that the data were produced by random chance alone.

Scientific conclusions and business or policy decisions should not be based only on whether a p-value passes a specific threshold.

Proper inference requires full reporting and transparency.

A p-value, or statistical significance, does not measure the size of an effect or the importance of a result.

By itself, a p-value does not provide a good measure of evidence regarding a model or hypothesis.

What has been the reaction to ASA's pronouncement and other criticisms of p-values? For the most part, it has been muted. Most research articles still present statistical analysis with p-values indicated and the discussion tends to focus on variables shown to be statistically significant.

One exception is the *Basic and Applied Social Psychology* (BASP) journal (impact factor=1.818). In an editorial in 2015, the editors stated unequivocally that results from null hypothesis significance testing procedures (NHSTP) would no longer be accepted for publication:<sup>17</sup>

If manuscripts pass the preliminary inspection, they will be sent out for review. But prior to publication, authors will have to remove all vestiges of the NHSTP (p-values, t-values, F-values, statements about "significant" differences or lack thereof, and so on).

Confidence intervals are also banned:

Regarding confidence intervals, the problem is that, for example, a 95% confidence interval does not indicate that the parameter of interest has a 95% probability of being within the interval. Rather, it means merely that if an infinite number of samples were taken and confidence intervals computed, 95% of the confidence intervals would capture the population parameter. Analogous to how the NHSTP fails to provide the probability of the null hypothesis, which is needed to provide a strong case for rejecting it, confidence intervals do not provide a strong case for concluding that the population parameter of interest is likely to be within the stated

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<sup>17</sup> Trafimow, D. and M. Marks, *Basic and Applied Social Psychology*, Editorial, Volume 37 (2015), p. 1-2.

interval. Therefore, confidence intervals also are banned from BASP.

A review of three recent articles in the journal shows that authors have abided by the editorial guidelines:

Articles usually contain basic statistics, such as means and variances, for variables in the experiments or tests performed.

Articles rely on graphical presentations (tables, charts, graphs) to illustrate key results.

Articles introduce statistics other than those associated with NHSTP, such as a similarity index, to explain results.

Since the focus is not on statistically significant results, the articles tend to discuss the practical significance of the results.

Some articles in the BASP include calculation of the *effect size* that measures the strength of the relationship between two variables. Effect size is actually a term for a family of measures that includes correlation, odds ratios, and standardized mean differences. As an example, a discussion of results from logistic regression almost always show odds ratios.

Bayesian analysis (named for the English mathematician Thomas Bayes) has been suggested as an approach to analysis. In a nutshell, Bayesian analysis is a procedure for statistical inference that allows a research to combine prior information about a parameter of interest with evidence from information contained in a sample. A prior probability distribution for the parameter of interest is specified first. Evidence is then obtained from a sample, and combined through an application of Bayes's theorem to provide a posterior probability distribution for the parameter. The posterior distribution is the basis for statistical inferences about the parameter. Identification of the prior distribution may include a certain amount of subjectivity, which statisticians have historically avoided. However, the Bayesian approach allows researchers to incorporate what is already known about a parameter into their conclusions, and to calculate how probabilities change as new evidence arises.

Finally, Andrew Gelman of Columbia University has advocated a more radical approach to research. The first step in this approach is to conduct an exploratory study and identify potentially interesting findings without worrying too much about false alarms. On the basis of the initial study, researchers would decide exactly how they planned to confirm the findings, and publicly preregister their intentions on an open forum. They would then perform a replication study and publish the results alongside those of the exploratory study.

# Overkill

Tracy Martins

## Introduction

Homicide studies have generally ignored the fact that some incidents will contain multiple wounds that are excessive for killing an individual. These cases have been labeled under homicide, but need to be analyzed further because their abnormality. Individuals commit homicide for a variety of reasons, whether it is due to mental illness, motive, substance use, or pleasure. The number of wounds inflicted on a victim during an incident has generally been overlooked, however this has been seen in a variety of cases, but has not been properly analyzed or defined in terms of why it occurs. A few studies have mentioned the term “overkill” by referring to similar terms, such as, “excessive wounding” or “multiple wounds” (Fekete and Fox 1980; Kaliszan 2010; Nikolic and Zivkovic 2015; Trojan and Krull 2012). Those that did, focused on the incidents, not on the possible reasoning or causes, nor the possible benefits of examining these cases. “It is difficult to identify a specific boundary between what is or is not necessary to kill the victim and the offender’s subjective awareness of it as the number of wounds decreases; in other words, any sort of an objective and quantitative cutoff point has not been put forth” (Trojan and Krull 2012:2873). Although the number of wounds needed to stop or kill an individual differs, some cases are seen to be pushed to an extent where there is no need to continue to inflict further harm. Thus, a limit for the number of wounds inflicted may be necessary for the definition, and other factors playing a part during the incident must also be considered. This study aims to define the term “overkill” and divide the topic into different categories in which overkill is seen: intimate partner homicide (IPH),

law enforcement caused homicide, gang-related homicide, stranger/ victim homicide: “normal” and serial, and suicide. The purpose of this research is to gather information from literature and law enforcement cases on homicide and suicide that can aid in defining and analyzing data on overkill in future research. The goal is to be able to discover a workable definition of overkill that can help distinguish certain incidents and further explore the relationship between overkill and an individual (i.e., possible mental illness, substance use, etc.).

### **Literature Review**

Literature on “overkill” is limited. Studies are either difficult to access or focus on a general definition, such as, “the infliction of massive injuries by a perpetrator by far exceeding the extent necessary to kill the victim” (Nikolic and Zivkovic 2015:498). It is difficult to determine at what point an incident is considered to exceed a necessary amount, which is why it was not established by several authors. Articles published for forensic purposes by Fekete and Fox (1980), Kaliszan (2010), and Nikolic and Zivkovic (2015) revealed the importance of the location and patterns of the wounds, location of the incident, and the medical examination records. These are useful in determining the relationship the victim may have had with an offender, if the cause of death (often exsanguination) and number of wounds were excessive, and whether or not the case was homicide or suicide. When discussing homicide, “the most common classification category divides violence into affective and predatory; the former of which is preceded by high levels of sympathetic arousal, characterized by fear and/ or anger, and is a response to a perceived imminent threat” (Radojevic et al. 2013:506). Radojevic et al. (2013), saw this demonstrated that the presence of sexual motivation for committing

homicide strongly coincides with instances of multiple stabbing, even more so than any other method of homicide (p.504). The differences in situations impact the number of wound inflictions. This explains the choice to separate overkill into categories; to discuss the variations in cases where overkill may be examined.

“Intimacy and emotional attachment that usually characterize family relationships are absent from stranger violence,” (Avakame 1998:601) this will be used in comparison/contrast to results on why overkill is committed in the other groups. Trojan and Krull (2012) suggested that the actual victim may be an opportunistically chosen stranger because the desired target is unavailable (p. 2871). This can perhaps involve the expressive and emotional drive in overkill that is noticed in intimate partner homicides to be seen in some of the other categories. Safarik and Jarvis (2005) did not find a significant difference in injury severity between victims and offenders who were known to one another compared to those that were not (Trojan and Krull 2012:2872). This aids in the motive to discover exactly what overkill is and what causes individuals to continuously wound an individual (or oneself) to an extreme level.

Kaliszan (2010) argues that the presence of numerous stab [or other] wounds in the body in the first place casts suspicion of homicide, which sometimes, upon detailed analysis of the wounds and based on the presence of other marks on the body such as tentative injuries and the circumstances of death (e.g. a suicide note, depression, previous suicide attempts) ultimately leads to regarding the case as suicide (p.26). Suicide is often excluded when discussing overkill owing to its rarity, but it remains a possibility that should be discussed and taken into consideration for producing a denotation. Although suicide is a different category from the main focus of homicide, it is briefly mentioned



due to the information gathered in cases that can benefit this study/ future studies and law enforcement. The observations from research articles and due to being a possibility, suicide should not be excluded when defining overkill. Fekete and Fox (1980) noted that suicidal stab wounds are very rare in Western cultures and the suicidal stab wounds of the skull are literary rarities, but they do exist (p.634). Initially always being considered homicides, the rare cases of proven suicide usually involve people who are suffering from various mental disorders or who are under the influence of mind- altering drugs. If this is true for those who commit “overkill” during suicide, it may also be true for those who choose to harm others during homicidal cases. The authors also mentioned that the blade of the knife could not be driven through the skull by a man of average strength by a single blow but only by approximately a dozen hammer blows after its tip was secured against the surface of the skull. This observation may explain why there are multiple wounds inflicted during a homicide case. The mentality and the average human strength to deliver certain wounds in specific locations can impact the number of wounds since human anatomy can be an obstacle in harming a victim.

### **Discussion**

The definition for overkill has to include many considerations in order to provide proper and effective analyses. Specific information must be collected for a definition and for observing trends and/ or patterns in the categories. These include: the locations of the wounds, the number of wounds, the weapon(s) used, medical examiners’ findings and cause of death, offender characteristics when known, the location of the incident, and any other information that may be out of the ordinary (i.e., body may have been moved, telephone records, etc.).

Data are limited and access to cases need approval by law enforcement departments or other authorized personnel. All data would currently be gathered using case files from law enforcement. This current study may be limited to information and cases at the Brevard County Sheriff's Department due to time limitations and lack of accessibility to larger departments. Descriptions of cases must be accurately read in order to follow the definition of overkill. Further knowledge on overkill must be obtained in order to divide the categories into different studies to accurately analyze the data for each of them. Other factors that potentially play a part in overkill are substance use, mental illness, and IQ. During further analyses of each category, these factors would be taken into consideration along with other factors which may be noticed.

A definition is needed to aid in expanding the knowledge on overkill. The goal is to conduct future research, based on the definition, and use a wider set of data to analyze the connection of the cases and factors that impact the outcomes. Future data for this research can be from resource programs (those who survived or those who found help before they were murdered), law enforcement databases, interviews, and/or surveys and questionnaires that can be distributed to the offenders and witnesses. Limitations of these sources include 1) they are one sided stories; 2) with a low possibility of getting acceptance, improper incident recordings, lack of mental evaluations, etc. There are also many cases that go unsolved, which can limit data observation when connecting the offender and the homicide. These category comparisons may aid in past, current, or future cases which may be unsolved.

Evaluations and tests for substance use, mental illness, and the IQ of an offender would significantly aid in further examination of each category. Methods which can aid

in retrieving this list of information are necessary in pinpointing the reason offenders overkill victims (or suicidal individuals harm themselves to that extent). Observing the results can bring up other factors that can also be investigated. The lack of data collection at the time of the crime may impact the results of this study. Thus suggestions for information gathering must be considered.

### **Conclusion**

Excessive wounds have been spotted, but rarely seen as an abnormality that should be inspected. A variety of categories have been suggested for further analysis on overkill. These include intimate partner homicides, law enforcement caused homicides, gang-related homicides, stranger victim homicides: “normal” and serial, and suicide. Based on a combination of the literatures, each category appears to have a common theme for the cases. All categories involved some form of emotion, which is important for discovering if it can be deduced as an “unpredicted” drive/ motive for overkill. Can emotions have such an impact on an individual that it clouds someone’s judgment? Studies mention or attempt to analyze overkill with the information they have gathered, but a solid definition that is specific and has boundaries have yet to be concluded. A definition will aid in organizing data and connecting the patterns and trends in particular cases. This can lead to a possible relationship identification with the victim and offender, which can be found through certain details of an overkill case. Researchers can benefit from the definition for further analysis. Once appropriate data are gathered, a definition will be established and further analyses will be conducted.

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# A First-Hand Experience of the Multi-Faceted Effects of Serial Killers: The Case of the Seminole Heights Killer

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Serial killer. We are all familiar with this term due to our research, experience in law enforcement, and TV/Hollywood depictions of these rare yet horrifying offenders. However, as in the case of the “Seminole Heights Killer”, I learned that despite my training, experience, and research, this term instantly takes on new meaning when it happens in *your* neighborhood. As a longtime resident of Seminole Heights, a researcher in the areas of serial offending and statistical offender profiling, and former FBI Special Agent, the case of the Seminole Heights serial killer was devastating and eye-opening to me on both a personal and professional level.

The full version of this paper will discuss the case of the Seminole Heights Killer, and include first-hand perspectives from a variety of angles, including life as a resident in the neighborhood (experiencing the fear in the community, and the impact on our lives), working with the police department (seeing their hard work, and frustrations), researching serial offenders (how this work can help, but also how little we know empirically!), consulting with the media (and the complications and benefits that may result), and other downstream implications (such as the serious negative impact on local businesses). This serves as a brief overview of the full paper.

Although serial killers are extremely rare, and there is still much to be learned on the etiology and heterogeneity of these offenders, it is important to also consider the substantial and far-reaching impact for all those who may ever be unfortunate enough to experience it. By better understanding the multi-faceted effects of serial killers, we, as academics and law enforcement, may be more prepared to understand and respond to these cases should they ever occur.

### **Overview of the Case of the Seminole Heights Killer**

Waiting at a bus stop on the southeast side of Seminole Heights, an “up-and-coming” and diverse neighborhood located about three miles north of downtown Tampa, Florida, Benjamin Mitchell, a 22 year old black male and Seminole Heights resident, was shot and killed around 9:00pm on October 9, 2017. Just four days later, on the morning of October 13, the body of Monica Hoffa, a 32 year old white female, was found in an overgrown lot located less than a half mile from where Benjamin Mitchell was killed. Monica Hoffa also died of gunshot wounds, and believed to have been murdered on October 11 or 12. Then, at 7:57pm on October 19, a 20 year old Hispanic male named

Anthony Naiboa was shot in the back of the head while waiting for a bus, again in Seminole Heights. Anthony, who was diagnosed with autism, was not from the area and had simply taken the wrong bus home from work that night. Nearly a month later, at 4:50am on November 14, 2017, Ronald Felton, a 60 year old black male, was shot in the back while crossing the street to start his shift as a volunteer at a food bank in Seminole Heights.

Despite the fact that each of these murders took place out in the open, sometimes on or near very busy streets, there were no eye-witnesses to any of the crimes. Grainy surveillance video from the first murder, which was circulated repeatedly on the local and national news, depicted a tall, thin man with an awkward gait walking in the direction of the crime scene while twirling his cell phone, before sprinting away moments later. However, it was hotly debated whether this person was a suspect, or accidental bystander, to the murder. No one ever came forward to identify themselves, or someone they knew, as the person in the video.

Indeed, there was enormous debate as to whether these killings had all been committed by the same person (i.e., a serial killer), or whether they were coincidence, gang initiations, or a group of people with a shared evil goal. (I would know, as I appeared on the local and national news, radio shows, and newspapers over a dozen times indicating my controversial belief that this was a single serial killer in the early days of the case.) Surveillance footage taken from the fourth and final murder showed a man with a highly similar build, walk, and mannerism to the suspect in the original footage, which all but confirmed that we were dealing with a serial killer.

Ultimately, despite the Tampa Police Department's best efforts—and I know first-

hand that everyone from patrol officers to the Chief were working non-stop on this case—the suspect was identified through a series of fortunate events. On November 28, 2017, a tall, thin, young black male named Howell Donaldson III handed a bag to Delonda Walker, his manager at a McDonalds nearly 2 miles south of Seminole Heights, and asked her not to look in as he went to nearby AMSCOT. Luckily, Ms. Walker looked inside, saw a large pistol, and immediately called police. As luck would further have it, a female Tampa Police officer was completing paperwork in that exact McDonalds, and when she saw the make and caliber of the firearm, she immediately called for backup. Donaldson was arrested for the murders of Benjamin Mitchell, Monica Hoffa, Anthony Naiboa, and Ronald Felton. He is currently awaiting trial in the local jail.

### **Impact of Serial Killers on Local Residents**

As Floridians, we tend to see it all: everything from beautiful sunsets and gorgeous beaches, to gigantic pythons on the loose and all forms of odd human behavior (often in the nude). We have grown accustomed to this, and few things, short of hurricanes, rattle our cage. However, in the 51 days where a serial killer was hunting strangers at random and shooting them in the back, (in our neighborhood!), an extreme wave of terror, anxiety, and anger came across the community. It's difficult to explain exactly how this felt, and manifested, but suffice to say the only time I had seen such a level of panic was when Hurricane Irma (at the time, the size of France) was set to hit Tampa head-on.

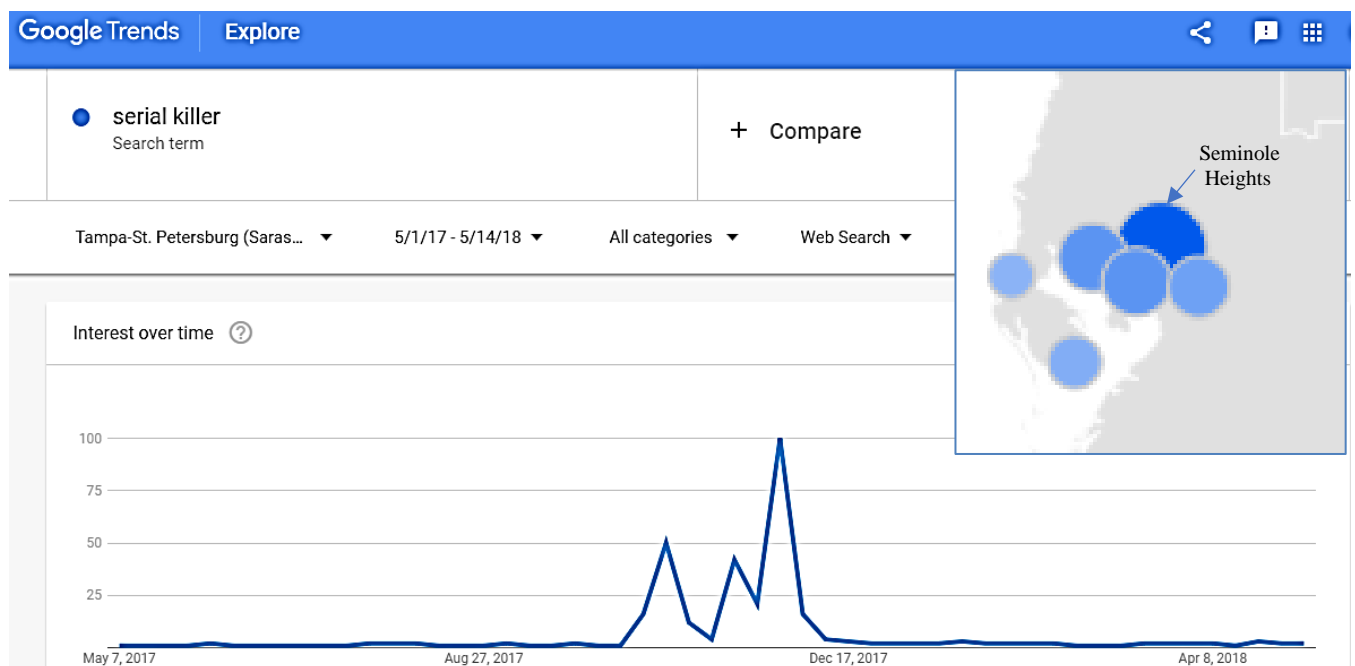
There were no sounds. No one went outside. Really, no one smiled. For such a vibrant and fun community, it was like the switch had instantly been turned to “off”. Everything stopped. Inside our tiny historic homes, Seminole Heights residents were



gripped with fear, and shared their fears (and theories of the crime) as the sole means of coping with the anxiety and pain. It also appears that many people, both in Seminole Heights and across the greater Tampa Bay region, used the internet as a means of gaining information about serial killers, perhaps to better understand what was happening around them.

Data collected from the Google Trends search function show that the search term “serial killer” started rapidly increasing on October 21, 2017 (two days after the third murder) and ultimately hit a record high (a perfect score of 100) on November 29 (the day after the suspected killer was arrested). The searches subsided back to a normal rate by December 13, indicating this was a confined, but extreme, level of interest in serial killers by the Tampa Bay region. And, as shown in the inset in the graph, the dark blue circle is the area near Seminole Heights.

**Figure 1.** Google Trends Results for One Year (5/17-5/18) of “Serial Killer” Searches in Tampa.



Note: A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as

popular.

### **Consulting with Local and National Media**

To me, this all felt like an out-of-body experience. Having studied serial killers and other types of prolific and violent offenders, I knew how rare it was for such crimes to occur, let alone happen in *my neighborhood*. It was even stranger then, on October 21, 2017 that I received a call from ABC Action News asking me to appear as an expert to discuss the murders. It was true that on October 17, several days before the third murder, I tweeted that “there may be an active serial killer in my neighborhood.” But I never expected anyone to read it (who really reads my tweets?!), let alone have a news station call me for my expertise on serial offenders and the case.

After serious deliberations—I did not want to appear as if I was capitalizing on the horrific events in my own community, or “selling out” to the media—I decided I would do the segment. I realized that if it were not me speaking to the camera and fellow Tampinians, it would be someone else. While I had the research experience and training to provide empirical data on serial killers to help viewers better understand the terrifying situation, and had the wherewithal to encourage viewers to remain calm and take rational steps to protect themselves, I was afraid others may provide information based solely on personal beliefs or assumptions, and frighten the public even further. For better or worse, I was called again, and again, and again, appearing on shows and articles for CNN, CBS News, NBC’s Today Show, NPR, The New York Times, Washington Post, Tampa Bay Times, ABC Action News, Bay News 9, and more.

Despite my outward appearance, to say that I was actually calm throughout these 51 days would be a lie. Between worrying about my friends and neighbors and strangers who may fall victim to this killer, and the comparatively petty fear of saying something

stupid on national news, I slept very poorly those nights. But the elation and relief (yes, I know, innocent until proven guilty) on the day Donaldson was arrested is also a feeling that I will never forget.

While this experience is a  $n=1$ , and I hope to never increase that sample size, the lived experience of having both a professional and (very) personal interest in this case has taught me more than all my years of studying serial killers, combined. I will elaborate on these experiences and what I have learned in my presentation at HRWG, and look forward to seeing you there.

# The Pulse Scrolls

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## Abstract

On June 12, 2016, The Pulse nightclub in Orlando, Florida, was hit by a lone gunman whose goal was to murder as many club goers as possible before he was finally killed by police. He managed to kill 49 of our friends and neighbors, mostly from the LGBTQIA and Hispanic communities; at that time more people were killed during The Pulse mass murder than had ever been murdered in United States' (U.S.) recorded history. Footage of this tragic event exists on film, a documentary has been produced with the premier shown in Orlando, and the gunman's widow was recently acquitted by a federal jury for aiding and abetting and obstruction of justice in Orlando. In addition to these artifacts and actions taken in remembrance of the 49 we lost, large brown rolls of paper, commonly called the Scrolls, were placed at a number of sites around the city where visitors could express their thoughts and share their love and affection and/or their anger and hatred of the killer and the deadly deed he had committed. Soon after the Scrolls were picked up by Hands On Orlando, the organization that placed them at the sites, we got an email asking if we would like to digitize the messages people left so they could live on into the future and perhaps be used by researchers. In this brief paper, we

will share some of the categories of messages left by visitors and explore some ways that researchers may use these data for further study.

### Introduction

Events can leave a lasting impression on how we frame our shared stories, experiences, and lives. Specifically, traumatic or violent events can impact our perceptions and change the way we think about various social groups and institutions. The Parkland High School shooting in Parkland, Florida, for example, galvanized national debate and discussion about gun control. Similarly, white supremacist marches in 2017 renewed tension surrounding race relations past and present. In such cases, major, often unexpected, violent events can trigger massive societal reaction alongside the experiences of those closer to the event.

In this study, we examine the documentation of one such event – the 2016 Pulse massacre in Orlando, Florida. Specifically, we outline themes that emerged in the documentary efforts of survivors, friends, family, and patrons of the Pulse nightclub in the wake of the event. Such impressions, recorded and shared in writing, allow us to view the human costs of the event. It also allows us to explore the criminological and sociological significance of collecting and analyzing the ways people experience and make sense of traumatic events, violence, and inequalities in society brought to the surface by major events. To this end, we utilize messages left in memorial of the Pulse massacre as a keyhole through which we may view the traumatic processing of people who experienced one of the deadliest mass murders in the history of the U.S.

## Background

On June 12, 2016, The Pulse nightclub in Orlando, Florida was hit by a lone gunman whose goal was to murder as many club goers as possible before he was finally killed by police. He managed to kill 49 and injure 68 of our friends and neighbors in the process. In fact, more people were killed during The Pulse mass murder than had ever been murdered during one event in all of recorded history. Rather than simply a mass murder, however, Pulse also represents a violent assault upon the LGBTQIA community. This is because Pulse was a popular, safe haven for LGBTQIA people in the heart of a city with a significant LGBTQIA population. Further, this occurred at a time when other violent attacks against LGBTQIA safe havens were thought to be a thing of the past as increasing voices across the country heralded better relationships between LGBTQIA communities and mainstream society. The tragedy at Pulse nightclub stunned residents of Orlando, people across the United States, and around the world.

There were a wide variety of responses following the Pulse Massacre. Many public figures raised money for survivors, families of the victims, first responders, and healthcare professionals who were affected by Pulse and joined forces with onePULSE Foundation, a non-profit incorporated by the owners of Pulse nightclub. Some artists wrote songs or poetry to commemorate the victims and how the Pulse shooting affected the LGBTQIA community. The stadium for the Orlando City Soccer Club dedicated a rainbow-colored seating section to the 49 lives lost in the tragedy, while Orlando Magic honored victims' families and survivors during their opening basketball game. Footage of this tragic event exists on film and a documentary by Charlie Minn was produced with the premier shown in Orlando. The gunman's widow was recently acquitted by a federal

jury of aiding and abetting, and obstruction of justice in Orlando. Put simply, the event itself had wide ranging direct effects on the city and population of Orlando.

Members of the Central Florida and LGBTQIA communities responded to the Pulse Massacre with an outpour of love and support, while grieving alongside those who were directly affected by the tragedy. To help community members grieve and begin healing from this tragedy, a non-profit organization, Hands On Orlando, coordinated and led the PULSE Scrolls project. Scrolls were placed in more than a dozen locations around Orlando and community members wrote and drew encouraging messages, pictures, and personal reflections in response to the Pulse Massacre. Hands On Orlando staff and volunteers handled the scrolls and replaced full scrolls with new ones for more than two weeks. The PULSE Scrolls Project helped bring people and the community together throughout the aftermath of the tragedy. Soon after the completion of the project, we got an email asking if we would like to digitize the messages people left so they could live on into the future and perhaps be used by researchers. While doing initial preliminary examination of these scrolls, we noticed some significant themes or categories of messages left by contributors. This led us to explore some ways that researchers may use these data in future studies.

## Findings

The PULSE Scrolls captured a wide range of raw emotions and memories from community members. In this section, we discuss some examples from the scrolls. In so doing, we offer a preliminary snapshot of community reactions to the event, which we plan to build upon in a subsequent draft.

### *Emotions*

Many of the messages were emotional reactions or responses to the Pulse Massacre. Specifically, people expressed a range of feelings concerning grief for the 49 lives lost during the tragedy. For example, some of the messages were inspirational in content, such as “Peace will win and fear will lose” and “Love wins!” At the same time, other messages included spiritual hopes and beliefs related to those lost. For instance, people wrote things like, “Rest in Peace Angels of God” and “Angels fly home to heaven where you belong. See you soon”. Alongside these messages, many others simply expressed feelings of grief and loss as a result of the event.

### *Memory*

Alongside emotions, much of the content focuses on memory. In some cases, memory arises in the form of calls to never lose sight of what happened at Pulse. For example, people wrote things like, “Rest in Peace, Never Forgotten. Orlando United.” In other cases, people shared desires for unification inspired by the memory of Pulse. This involved statements from others noting they came from Michigan, Georgia, and other states to the site of the attacks, and posting iterations of “Never Forget” or “United” alongside demonstration of their state or city or regional location. These examples lead us to consider the importance of memory and statements about memory when looking at major violent events.

### Concluding Thoughts

In this brief report, we have begun the process of sharing data concerning community reactions to the Pulse Massacre that happened in Orlando, Florida in 2016. While we will spend time coding and outlining the overall patterns contained in this documentation; here we share early observations of themes and patterns emerging from the messages left on the scrolls. In so doing, we seek to consider the ways people respond to and memorialize major violent events, and the ways such events can inform the public as well as sociological and criminological analyses.



# “It’s Going to be Extra Fun!”: Analysis of an Atypical Case of Teen Homicide as Leisure Behavior\*

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## **Abstract**

This presentation is a case analysis of an unusual team homicide, committed by juvenile offenders, which occurred in southern Idaho in 2006. The two juvenile offenders successfully planned and killed a classmate, who they had described as a friend. An examination of the case found that, consistent with recent research in the areas of literary criminology and leisure science, the offenders’ specific leisure and recreational preferences shaped their contemplation and operationalization of homicide. Before committing the offense, the juveniles videotaped their conversations showing keen interest in committing multiple single-event homicides. This presentation details how atypical homicide may be structured as leisure experience, and how a leisure context may be connected with important psychological and sociological aspects of atypical homicide.

## **Introduction**

Recently, scholars examining homicides have expanded upon historically employed perspectives of specific types of expressive homicides, mainly mass and serial murder, to tie in wider media and popular cultural influences along with the typically studied elements in neurobiological, psychological, and sociological variables. Thus far, this multidisciplinary approach has generated important findings in homicidal research. Rooted in sociology and social psychology, leisure science is a pronounced area that may also provide important insights as it puts emphases on what people do for pleasure and enjoyment, why they may choose their behaviors, and the perceived costs and benefits of such behaviors. Leisure scholarship integrates expertise from associated fields but also features its own perspectives and theories.

When analyzing leisure science largely, scholars suggest that particular cultural symbols and media are often found in cases of expressive homicide (Arntfield & Danesi, 2016, 2017; Picart & Greek, 2007). Specifically, literature on serial murder has found that offenders commonly establish fantasies that aid in their crimes. Usual psychiatric elements are commonly present in those who commit violent crimes, but many killers have been found to form their behaviors on fictional works (Arntfield & Danesi, 2017; Rojeck, 1999). Leisure culture allows for explicit material in which offenders can originate fantasy content from and researchers have recently noted that behaviors of several serial and likely some mass murderers is experienced as a preferred leisure activity (Gunn & Caissie, 2006; Murray, 2017; Rojeck, 1999; Williams, 2017a, 2017b; Williams, Thomas, & Arntfield, in press; Williams & Walker, 2006). Flow theory suggests personal satisfaction in leisure behaviors is a balance of skill level to challenge: if the challenge surpasses a person's skill level, then they are frustrated, but if the challenge is not sufficient compared to their skill, then they are bored (Csikszentmihalyi, 1997). Flow theory, has been empirically tested among several legitimate leisure behaviors, and may aid in predicting a serial killer's satisfaction (or lack of) they experience through killing (Williams, 2017a, 2017b). Thus, leisure theory can provide understanding into how various forms of serial homicide can be structured and how these patterns may be unique to the killer (Williams & Vincent, in press). As leisure involves a purposeful decision and intrinsic motivation, instrumental homicides are excluded as potential leisure, but it can be used in analyzing those who kill primarily for pleasure to allow for a deeper understanding of their motivations and experiences.

### **Case Presentation**

An unusual case in 2006 of intentional, expressive homicide that resulted in the death of a 16-year-old female who was housesitting for her aunt in Idaho by two juvenile offenders is presented and analyzed from a leisure perspective. The killers had spent time with their victim and her boyfriend at the home prior to the planned attack that was intended to kill both the victim and her boyfriend later that evening. But, the victim's boyfriend had returned to his home before

the offenders returned. In their attack, the offenders shut off power to the home, entered through a door they had previously unlocked earlier that day, wore clothes concealing their identities, and stabbed the victim multiple times.

This case is atypical for many reasons. The two males were 16 years old when they discussed plans of becoming serial killers and eventually completed their first murder. Young serial killers are extremely rare (Myers, 2004) as most begin killing in their 20s and early 30s, but of the cases of murderous teenagers, it is rare for them to continue killing, usually because they do not have the skills to evade being caught before they can kill again (Fox & Levin, 2018; Hickey, 2016; Myers, 2004). The juveniles worked as a team, which is unusual as most serial killers work alone (Hickey, 2016). The victim was a friend, which is strange to most serial homicides as strangers are most commonly targeted (Hickey, 2016). The killers even stated, “They’re our – our friends but we have to make sacrifices... Uh, I know that’s not normal but what the hell.” The juveniles used separate knives to stab their victim thirty times.

Another atypical aspect of this case was how the offenders documented themselves discussing their plans in efforts to create their own horror movie that was inspired by the popular horror movie, *Scream*. In the videos, the killers stated their detailed plans and potential motives, such as “We’re going for a high death count” and “So we’re gonna fuckin’ kill her and her friends and we’re gonna keep moving on...we’re gonna be murderers, like, let’s see, Ted Bundy, like the Hillside Strangler... The Zodiac Killer.” Then added “Those people (referring to the previously mentioned serial killers) were more amateurs compared to what we are going to be; we’re gonna be more of higher scores.”

### **Forensic Leisure Analysis**

It is evident that leisure played a large role in the offenders’ fantasy, planning, and execution of the murder, and their activities and behaviors reveal serious, rather than casual leisure (Williams & Vincent, in press). The juvenile killers videotaped themselves laughing as they planned to commit the murder; one even stated, “It’s going to be extra fun!”, while the other

commented, “I’m horny just thinking about it,” while previously expressing a need for them to “break away from normal life” (relief from boredom). As mentioned, they talked about the fame they would receive from “going for a high death count,” while comparing themselves to distinguished serial murderers. One of the offenders that had less leisure interest in making the horror films, yet was responsible for much of the filming, stated, “We’re gonna go down in history; we’re gonna be just like *Scream* except in real life terms,” which insinuates their desire to relate to and impress their co-offender. This same offender also stated later that “Murder is power; murder is freedom,” which aligns with expressive homicide as a deviant leisure behavior (Williams, 2017a, 2017b; Williams, Thomas, & Arntfield, in press; Williams & Walker, 2006). Interestingly, it was this particular murderer who informed police where the evidence was.

In cases of team homicide, one is typically psychologically dominant, but the others perceive the murder as acceptable and occasionally even desirable (Hickey, 2016). Both juveniles were found responsible, but the offender who was less vocal, did not confess, and had particular interest in making horror movies appeared to be the more dominant offender, while the other enjoyed the process while trying to impress and please the other. In the video filmed after the killing, the offender who had confessed was more distraught than his partner, who demanded, “Shut the fuck up; we gotta get our act straight.” The more dominant killer also stated that “there should be no law against killing people,” and the process of killing aligned with his preferred leisure script. It is important to note that both offenders were juveniles and consequently lacked sufficient neurocognitive maturity, but it remains challenging to predict accurately, even with their videotaped plans, if one or both offenders would have continued killing if they were not apprehended swiftly. But, it is likely that these offenders would commit future violence.

### **Discussion and Conclusion**

This case of two juvenile offenders that killed their friend in efforts of becoming serial killers is atypical from many expressive homicides. Upon reviewing the case details, it is apparent that psychological processes seemed to have triggered their homicidal activities, but these

processes were also developed and completed as a leisure experience. Relief from boredom and the desire for fun and excitement are typically found to influence several legitimate and deviant leisure experiences. Recent research (Arntfield & Danesi, 2016, 2017; Picart & Greek, 2007) aligns with findings that the the killer’s planning and execution were derived from broader leisure culture (*Scream*); yet also imitated their desired hobby (a serious leisure preference associated with an expression of identity) of the more dominant offender (Williams & Vincent, in press; Williams & Walker, 2006). In addition, the commission of murder itself was highly anticipated as “extra fun” that would provide fame to the killers. Adding to traditional perspectives of homicide, leisure science may yield insights into factors of specific types of expressive homicide. While experts know that many perpetrators find joy in killing, more scholarly attention to how leisure interconnects with traditional social and behavioral theories is desirable and can be important to understanding various motivational processes of specific offenders.

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