

“Spatial and Social Contexts of Mortality Resulting from Interactions with Police”

Extended Abstract for PAA 2017 Annual Meeting

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Recently, police use of lethal force has made national headlines and sparked protests across the United States. However, representative data on these incidents are very rare, hampering the ability to study systematic patterns or biases in these events. This project uses a timely dataset from the Texas Justice Initiative covering all deaths that occurred in police custody in the state of Texas from 2005 to 2015, including individuals that died before processing by law enforcement agencies (Woog 2016). Based on reports filed with the Texas Attorney General, these data detail interactions leading to deaths, including written summaries of each event, and provide information such as time and location. Using geodemographic data from the American Community Survey, we will analyze locations of pre-custody deaths and evaluate how neighborhoods might affect the likelihood of interactions between police officers and suspects escalating to the point of deadly force. We expect to find that police kill more people in neighborhoods with both large minority and white populations, and that segregated local areas will further contribute to the likelihood of lethal force. We will also examine possible temporal trends in fatal interactions with police; have these deaths increased recent years, prompting the increased attention in media coverage? This project will contribute to the emerging literature on racial and ethnic disparities that populations face in their interactions with and surveillance by law enforcement agencies, as well as extend research on how local area effects relate to policing activity.

Previous Research

Sociological accounts of police use of lethal force date back to the 1950s, and have framed officer's understanding of violence as a legitimate tool, even if it's actually legal grounds are questionable (Westley 1953). Evidence of this attitude is present in a recent report by the U.S. Justice Department criticizing training procedures and supervision policies in the Baltimore Police Department, resulting in patterns of escalation and abuse of physical force (U.S. Department of Justice 2016). The overrepresentation of minorities as victims of lethal police force has also been a point of debate in criminology, with two competing hypotheses: bias in police officer decisions, or a real overrepresentation of minorities in criminal offenders (Goldkamp 1976). There is general evidence to support hypotheses that police violence is direct response to crime such as murders (Jacobs and Britt 1979; Jacobs 1998). However, more recent work has provided more evidence supporting a perspective emphasizing bias in police. A county-level analysis of national police shooting data uncovered that unarmed black citizens are 3.49 times more likely to be shot by a police officer than an unarmed white citizen (Ross 2015). Additionally, much scholarship has used the minority threat hypothesis in an ecological framework to explain department variations in both lethal and non-lethal force (Jacobs 1998; Holmes 2000; Smith and Holmes 2003). In these studies, increased proportions of minority groups are positively related with the number of violent incidents involving police officers. Organizational dynamics in police departments have also been found to influence the deployment of force (White 2003; Parker et al 2005).

Hypotheses

Our research questions are motivated by the racial threat perspective. We hypothesize that, after controlling for a range of factors, (1) Texas police officers are more likely to use lethal force in a local environment with a large minority residential population, but also with a sizeable white residential presence. Putnam (2007) presents evidence that increased racial diversity in neighborhoods works to reduce social trust and cohesion in the short term. Police officers are likely aware of neighborhood tensions from their day-to-day experiences, and are likely to feel more threatened in an escalated situation in such an environment. Low social trust might also lead to residents summoning the police more often to less diverse neighborhoods, creating more potential for volatile situations. We also expect the spatial configuration of these different racial populations to contribute to police tendency to use deadly force. Segregation is usually an indication of inequality, and racial inequality in a community is an important component to minority threat theory. We hypothesize that (2) local areas with higher segregation of a diverse population will have more incidents of lethal force by police.

Data and Methods

Using data from the Texas Justice Initiative (Woog 2016) we investigate the risk of dying during pre-booking interactions with law enforcement officials. To ensure that only deaths resulting from police action are considered, we limit the data to cases coded as “justifiable homicide” and “other homicide” by officers (approximately 600 cases). The Texas Justice Initiative data is based on reports filed with the Texas Attorney General, and provide detailed information for each incident, including its location. We exploit this information and geocode death events to relate to characteristics of the local environment using census tract data from the 2005-2009 and 2011-2015 five-year American Community Survey (ACS) estimates. The deaths are split into two time periods, 2005 through 2009 and 2010 through 2015. This division allows us to examine changes in the risk of death during a policing incident for individuals living in the same local community, and are easily comparable to the ACS five-year periods. Specifically, we use data from these two time periods to test the influence neighborhood racial and economic composition on both the likelihood and rate of these types of deaths, and examine any unexplained temporal differences or trends. We restrict our analysis to metropolitan areas in Texas above 200,000 persons, as non-metropolitan areas have demographically distinct racial and economic profiles from urban areas. We also remove we measure neighborhood characteristics at the census tract level and include only non-institutional census tracts (e.g. exclude military bases) in the analyses. With this data, we will estimate multilevel generalized linear models to predict probability of these mortality events occurring in community areas, using department-level characteristics to account for organizational effects.

Independent Variables

Neighborhood control variables include measures of economic conditions, education, neighborhood structure and stability, and potential police contact/presence. Neighborhood

economic conditions will be measured via inequality, average household income, and proportion of households in poverty. Inequality will be measured via the Gini Coefficient using the Pareto-linear procedure for dealing with categorical income data (Nielsen and Alderson 1997). Income inequality is especially important in Texas as cities like San Antonio have some of the highest contemporary economic segregation in America (Taylor and Fry 2012; Florida and Mellander 2015). The proportion employed and the proportion 25 years or older with a high school diploma or GED will also be included in models to further capture the socioeconomic status of local residents (Hipp 2007, Sparks 2011).

Neighborhood structure will be captured through the proportion of occupied residential units and the homeownership rate. Neighborhood stability will be measured through the proportion of individuals who moved into their current residence within the previous five years, as prior research has linked neighborhood stability with crime rates (Sampson, Raudenbush, and Earls 1997, Hipp 2007). Here, we expect that neighborhood stability will affect collective efficacy which in turn affects the number of police calls in a neighborhood, increasing likelihoods of fatal events. Alternatively, low residential stability could contribute to feelings of unfamiliarity and threat in police officers, making use of force more likely.

Finally, a measure of potential police contact will be included. This variable is important to rule out the possibility that higher incidences of deaths is simply a result of higher exposure to law enforcement. We control for potential police presence via the number of departmental arrests, and the number of establishments licensed to sell alcohol in each census tract. These data come from the Texas Alcoholic Beverage Commission (TABC) database of licensed establishments, their full street address, and the year their license originated. This information will allow us to measure the prevalence of businesses selling alcohol within the local area (i.e. alcohol licenses per 1,000 residents). Availability of establishments selling alcohol is an important proxy for crime (Zhu, Gorman, and Horel 2004; Sparks 2011) and thus provides insight into potential police

The independent variables related to our hypotheses capture neighborhood racial composition and. To capture within-neighborhood racial heterogeneity, all models include both proportional measures of each racial group and a Herfindahl index based on these proportional measures (Hipp 2007). Research has found for a connection between higher levels of violent and property crimes and higher levels of racial heterogeneity (Hipp 2007). We will use a second-order queen contiguity matrix to define local areas for each census tract when calculating these composition measures. Further, we use a multigroup Theil Index (Reardon and Firebaugh 2002) to measure racial segregation for this larger local environment. If our hypotheses are not true, after implementing the above controlling variables, these racial composition variables should not be statistically correlated with likelihood of police using lethal force.

Modelling Approaches

First, we will use negative binomial count models to estimate incidences of pre-booking deaths with neighborhood population as the offset term. Fixed effects for police departments will be

included to control for institutional differences between departmental procedures that may lead to differences in outcomes. We will then consider two additional modeling approaches: (a) a hurdle model to focus on the characteristics of neighborhoods that do or do not experience pre-booking deaths in police custody versus neighborhoods that experience higher or lower rates of such deaths, and (b) a random effects model to estimate the proportion of variation in these rates can be attributed to institutional differences (i.e. the intraclass correlation coefficient). All three approaches will allow us to test the robustness of our results while investigating slightly different but equally relevant aspects of our proposed mechanism.

Additional analyses will be carried out to include deaths in pre-booking police interactions coded as suicides, accidental injury to self and caused by others, other causes. These analyses will include identical independent variables in the previous analyses in order to see if patterns remain similar. Given our theoretical background and hypotheses, neighborhood characteristics should not be correlated with these outcomes as these types of pre-booking deaths are less dependent on police force and action than justifiable homicides. These outcomes should be random, unless systemic error has occurred in the coding scheme.

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