**The ecological structuring of police officers' perceptions of citizen cooperation***

John A. Shjarback

Justin Nix

Scott E. Wolfe

**ABSTRACT**

Neighborhood structural conditions influence police behavior, but few studies have addressed whether neighborhood conditions are associated with officers' *perceptions* of residents in those communities. This is an important gap because officers' perceptions of what they can expect from residents in disadvantaged communities may help explain differential treatment. Using data from the Project on Policing Neighborhoods, we examined neighborhood effects on officers' perceptions of citizen cooperation. Officers working in beats with more concentrated disadvantage and higher homicide rates were less likely to believe that citizens would be willing to cooperate with law enforcement. We discuss this finding in relation to explaining differential police treatment across communities and what it means for the legitimacy dialogue that unfolds between the police and community.

*Keywords*: neighborhood effects; concentrated disadvantage; ecological structuring; citizen cooperation; police perceptions; dialogic model; self-legitimacy

The police have the legal authority to use deadly force, deprive liberty through stops, searches, and arrests, and coerce people to do as they command when warranted. Simply put, the police have a great deal of power in our society. For these reasons, it is important to understand what causes officers to think and behave in particular ways. We know that social context, for example, sets the stage for police-citizen interactions. Neighborhood conditions such as concentrated disadvantage and collective efficacy partially shape citizens' perceptions of the police (Decker, 1981; Nix, Wolfe, Rojek, & Kaminski, 2015; Reisig & Parks, 2000; Rosenbaum, Schuck, Costello, Hawkins, & Ring, 2005; Sampson & Bartusch, 1998; Schafer, Huebner, & Bynum, 2003; Schuck, Rosenbaum, & Hawkins, 2008; Weitzer, 2000; Wu, Sun, & Triplett, 2009). Citizens who come from disadvantaged communities also tend to be less willing to cooperate with the police (Baumer, 2002; Reisig, McCluskey, Mastrofski, & Terrill, 2004). There are many potential reasons for this relationship—people in poor communities lack bonds with officers and fear retaliation from helping the police, to name a few. Neighborhood social context also influences police officer behavior (Fagan & Davies, 2000; Mastrofski, Reisig, & McCluskey, 2002; Meehan & Ponder, 2002; Sobol, Wu, & Sun, 2013). For example, officers are more likely to stop, search, arrest, use coercive force, and engage in misconduct in high-crime neighborhoods marked by concentrated disadvantage (Fagan & Davies, 2000; Fridell & Lim, 2016; Kane, 2002; Lee, Vaughn, & Lim, 2014; Petrocelli, Piquero, & Smith, 2003; Smith, 1986; Terrill & Reisig, 2003). Therefore, it is safe to say that neighborhoods matter to policing-related outcomes.

The problem, however, is that we do not know much about how neighborhood characteristics impact officers' *perceptions* of the citizens they serve (see Crawford, 1973; Hassell, 2007; Sobol, 2010; Werthman & Piliavan, 1967 for exceptions).[1] The manner in which

officers perceive potential interactions with the public, for example, is important because such perceptions may shape how officers ultimately behave in various social contexts. Bottoms and Tankebe's (2012) dialogic model of legitimacy suggests that officers' perceptions of citizens— whether they have favorable views of the police, for instance—is part of an ongoing dialogue between the police and citizens that establishes, maintains, or undermines police legitimacy. In other words, officers' perceptions of *what citizens think about the police* is central to how they feel about their own legitimacy and how they perform their job. Perceived citizen cooperation is critically important in this regard. Officers who believe that citizens are unwilling to report crimes or suspicious activity, offer information to help solve crimes, or work with them to address community problems are not in a position to provide the best policing to the community (Carr, Napolitano, & Keating, 2007; Gau Corsaro, Stewart, & Brunson, 2012; Klinger, 1997; Smith, 1986). Lack of community support in the form of uncooperative behavior sends the message to the police that the public does not trust them; their legitimacy as authority figures is being called into question. This is one reason we may observe neighborhood effects on officer behaviors. Community context provides a visual heuristic—a cognitive landscape—for what officers believe they can expect from the community. Such priming may shape officers' orientations toward and perceptions of citizens in the communities they police. An officer working in an impoverished, crime-ridden community may have little expectation that members of the public will cooperate and help him/her do his job. Importantly, however, we have little empirical evidence to date regarding whether neighborhood characteristics such as concentrated disadvantage and crime rates are associated with officers' perceptions of citizen cooperation. This is an important question because if variation in officers' perceptions of citizen cooperation is partially a function of neighborhood conditions, this has implications for how the legitimacy

dialogue and differential citizen treatment unfold.

Accordingly, the present study addressed the following question: Do neighborhood characteristics influence officer perceptions of citizen cooperation? We examined this issue using data from the Project on Policing Neighborhoods (POPN). Specifically, we tested whether concentrated disadvantage and homicide rates at the police patrol beat level were negatively associated with individual officers' perceptions of citizen cooperation. The broader purpose of this study was to begin incorporating social context into theoretical discussions and empirical research concerning the dialogic model of police legitimacy (Bottoms & Tankebe, 2012). More practically, we hope this endeavor advances our understanding of how the ecological structuring of officers' perceptions may lead to differential police treatment of citizens across neighborhoods.

## NEIGHBORHOOD IMPACT ON OFFICER PERCEPTIONS

Tremendous variation in economic disadvantage exists across neighborhoods in America (Bursik & Grasmick, 1993; Peterson & Krivo, 2010; Sampson, 2012). This variation is strongly associated with race/ethnicity and high levels of segregation, resulting in a host of deleterious outcomes for residents of disadvantaged neighborhoods, including fewer economic opportunities, poorer quality social institutions, and less advantaged social networks (Besbris, Faber, Rich, & Sharkey, 2015; Massey & Denton, 1993; Wilson, 1987). One of the most relevant manifestations of disadvantaged neighborhoods is the high level of crime that comes to characterize these areas (Shaw & McKay, 1942). Kane (2002, 2005) outlined how the same antecedents of social disorganization that lead to increases in neighborhood crime might create contexts for disparities in both officer and citizen perceptions and differential police behavior. Disadvantaged neighborhoods generally experience low levels of informal social control and

collective efficacy, which results in higher crime (Bursik & Grasmick, 1993; Sampson, Raudenbush, & Earls, 1997; Shaw & McKay, 1942). When neighborhood residents are unable to exercise informal social control, formal agents of social control – particularly the police – must step in to fill the void (Kane, 2002; Manning, 1978). Differential policing tactics and the manner in which officers are deployed across neighborhoods (socially disorganized, high-crime versus affluent, low crime) might contribute to disparities in citizens' perceptions of and behavior toward police across place.

Research has shed light on the deployment of officers and the aggressive policing tactics used in disadvantaged neighborhoods to address high levels of crime. The rationale behind these tactics stems from the order maintenance/broken windows approach (Wilson & Kelling, 1982). And while departments and their officers aim to reduce crime by focusing resources on the very neighborhoods that experience a disproportionate share of offending and victimization, the manner in which order maintenance strategies are usually carried out in practice is detrimental to citizens' perceptions of police. Officers in economically disadvantaged, high-crime neighborhoods utilize frequent vehicle and pedestrian stops (e.g., "stop, question, and frisk"; Braga et al., 1999; Brunson, 2007; Brunson & Gau, 2014; Gau & Brunson, 2010), summonses/citations for "quality of life" offenses, and misdemeanor arrests (Kane, Gustafson, & Bruell, 2013). The brunt of these involuntary police contacts falls on young, minority males who are disproportionately stopped, searched, and arrested by police (Hurst, Frank, & Browning, 2000). Studies have also generally found that neighborhood characteristics, specifically concentrated disadvantage, impact police use of force (Lee et al., 2014; Smith, 1986; Terrill & Reisig, 2003) and officer disrespect toward citizens (Mastrofski et al., 2002).

Aggressive tactics in disadvantaged communities lead some citizens to adopt negative

attitudes toward police – most directly through contentious personal and vicarious experiences with officers. Research has consistently found that unfavorable citizen perceptions of police are partially formed from negative interactions with officers (Brunson, 2007; Decker, 1981; Webb & Marshall, 1995; Weitzer & Tuch, 2002). More specifically, residents of disadvantaged neighborhoods cite frequent police harassment and unfair targeting/profiling as well as officer demeanor characterized as discourteous, hostile, and verbally abusive (Brunson, 2007; Gau & Brunson, 2010; Weitzer, 2000; Weitzer & Tuch, 2002). The nature of policing in disadvantaged, high-crime neighborhoods also contributes to residents' satisfaction with police (Reisig & Parks, 2000) and their mistrust of the broader criminal justice system, legal cynicism, and perceived illegitimacy of police (Nix et al., 2015; Sampson & Bartusch, 1998). Such negative perceptions reduce the likelihood of citizens in disadvantaged neighborhoods cooperating with police (Baumer, 2002; Reisig et al., 2004), whether as victims or witnesses – simply calling the police to report crime (Desmond, Papachristos, & Kirk, in press) – or when they are stopped and questioned (Anderson, 1999; Brunson, 2007; Weitzer, 2000).

The internal dynamics of neighborhoods set the stage for police-community relations and the types of individuals that officers encounter across places. Therefore, the broader social context may influence officers' perceptions of citizen cooperation. Surprisingly, little is known about how officers view residents of an area and whether neighborhood characteristics play a role in shaping those perceptions. While conducting ethnographic work in the 1960s, Werthman and Piliavan (1967) observed that officers divided the population and the physical territory that they patrolled into distinct categories. They proposed that this resulted in a process of "ecological contamination" where all persons encountered in neighborhoods perceived as "bad" were viewed by police as having little commitment to the moral order; put differently, officers

stereotype neighborhoods and the negative attributions are subsequently extended to the citizens who live there through a process of association. Crawford (1973) examined officers' perceptions of citizens, finding evidence that officers overestimated the amount of antipolice hostility among residents in disadvantaged areas of the city when, in fact, those citizens held more positive attitudes towards the police. In a more recent case study of a Midwestern department, Hassell (2007) discovered that officers cited dissimilarities in citizen attitudes and demeanor toward the police across different precincts in the city.

Sobol (2010) examined whether violent crime rates at the police district level ($n = 7$) influenced officer cynicism. He found that officers working in districts with higher rates of violence tended to be more cynical of citizens. Yet, studying officers in their broader social context might be problematic when using larger units of analysis, such as police districts. Districts comprise large geographic areas, and there is a great deal of variation in neighborhood characteristics (i.e., census tracts) within them – making it more difficult to isolate potential neighborhood/environmental influence on officers. Patrol beats are more similar in geographic size and are designated to conform most closely to existing neighborhood boundaries (e.g., census tracts; Mastrofski et al., 2002; Skogan & Hartnett, 1997; Smith, 1986; Terrill & Reisig, 2003). To date, however, there has been little quantitative work on this topic and, most importantly, limited discussion of the theoretical underpinnings of officers' perceptions of citizens across different neighborhood contexts.

## THE DIALOGIC MODEL OF POLICE LEGITIMACY

According to Bottoms and Tankebe (2012), legitimacy is an ongoing dialogue between power-holders and their audiences. In the context of policing, officers (i.e., the power-holders) first make a claim to legitimacy which citizens (i.e., the audience) interpret and respond to by

either accepting or challenging said claim. The police, in turn, interpret citizens' responses and may or may not adjust their claim accordingly. Importantly, Bottoms and Tankebe argue that power-holders must often engage in dialogues with multiple audiences. In other words, there may be segments of a community, which, for a variety of reasons, have differing expectations of the police. Further complicating matters, the expectations of one segment of the community may be at odds with those of another segment of the community. As but one example, citizens residing in more structurally disadvantaged areas may be more concerned with the police effectively responding to crime, whereas citizens in more affluent areas might concern themselves more so with how the police treat people (see Wolfe et al., 2016). This is a crucial consideration for police officers who, according to the dialogic model, interpret citizens' responses to their legitimacy claim and consider whether to adjust their claim accordingly.

Research has clearly established that neighborhood context influences police behavior (Kane, 2002; Klinger, 1997; Mastrofski et al., 2002; Smith, 1986; Terrill & Reisig, 2003). The dialogic model of legitimacy would suggest that variation in officer behavior may be driven, at least in part, by police officers' interpretation of citizens' response to their legitimacy claims. For example, Nix (2015a) demonstrated that officers believed citizens residing in high crime areas felt more obligated to obey the police when officers exhibited procedural and distributive fairness. On the other hand, officers indicated that effectiveness (i.e., how well police fight crime) was more closely tied to feelings of obligation to obey the police among citizens of low crime areas. Relatedly, Nix (2015b) found that in both high and low crime areas, police felt that citizen cooperation stemmed more so from effectiveness than normative evaluations about procedural and distributive fairness. At the same time, officers believed citizens of high crime areas were less willing to cooperate with the police than citizens of low crime areas.  Lastly, a

recent nationwide survey of nearly 8,000 police officers, conducted by the National Police

Research Platform for the Pew Research Center (2017), uncovered that 56% of the sample

believed an aggressive rather than a courteous approach is more effective in certain

neighborhoods compared to others; while 44% of officers agreed that hard, physical tactics are

necessary to deal with some people.

These studies offer preliminary evidence that neighborhood characteristics may influence

officers' perceptions of citizen cooperation. However, it is important to highlight that they relied

on officers' *perceptions of neighborhood conditions* and were unable to account for objective

neighborhood indicators. An important question left largely unanswered is whether there is a

neighborhood effect on officers' perceptions of citizen cooperation. That is, are officers working

in structurally disadvantaged areas less likely to believe citizens are cooperative than officers

working in more affluent areas? If so, the effect of neighborhood conditions on officers'

perceptions of citizen cooperation is relevant to how the legitimacy dialogue between the police

and public transpires. For example, officers who perceive uncooperative behavior from some

citizens may interpret this as a challenge to their legitimacy claim. One potential consequence of

this situation is that officers' self-legitimacy, defined as the confidence they have that their

police authority is rightful, may be adversely impacted (Nix & Wolfe, 2017; Tankebe, 2014).

Officers who believe the public is uncooperative may begin to question their own self-legitimacy

(Bottoms & Tankebe, 2012).[2]

What is more, a neighborhood effect on officers' perceptions has implications for how

the police behave. As noted earlier, structurally disadvantaged communities tend to experience

more use of force, stops, arrests, and misconduct at the hands of officers. One of the reasons

behind such differential treatment may be that officers develop negative orientations toward

structurally disadvantaged communities. In discussing citizens' perceptions of the police and the law, Sampson and Bartusch (1998, p. 800) argued that neighborhood characteristics create "…ecological structuring of normative orientations – 'cognitive landscapes' where crime and deviance are more or less expected and institutions of criminal justice are mistrusted" (see also Reisig & Parks, 2003; Wu, Sun, & Triplett, 2009). Theses cognitive landscapes likely impact officers' perceptions as well (Klinger, 1997). Neighborhoods characterized by concentrated disadvantage witness lack of community mobilization, informal social controls, and collective efficacy (Bursik & Grasmick, 1993; Sampson et al., 1997). Failure of the people in such neighborhoods to police themselves may send the message to officers in those areas that the residents do not care about the well-being of the community and are uninterested in cooperating with officers. Higher crime rates in neighborhoods, for that matter, may provide a visual cue to officers that the community is unwilling to help the police. This is particularly important given that concentrated disadvantage and more crime also tend to characterize minority communities (Anderson, 1999; Wilson, 1987) and the current legitimacy crisis facing the police largely stems from public outrage over excessive use of force against minority citizens (Pyrooz, Decker, Wolfe, & Shjarback, 2016; Wolfe & Nix, 2016a). Yet to date, empirical research has given insufficient attention to whether neighborhood context influences officers' perceptions of citizen cooperation.

Sobol and colleagues (2013) conducted, to our knowledge, the lone test of neighborhood characteristics, officer perceptions, and police behavior. Examining officers' use of their formal legal authority (i.e., "vigor"; see Klinger, 1997), which ranged from taking no action to making an arrest, they treated the patrol beat context as well as officers' level of cynicism of citizens as independent variables. Sobol et al. (2013) found that officers used higher levels of legal

authority (i.e., more vigor) in patrol beats with higher levels of crime, but officer cynicism was not associated with police behavior. However, officer cynicism was treated as a fixed effect rather than being allowed to randomly vary across patrol beats. Additionally, Sobol et al.'s (2013) primary objective was the impact of neighborhood characteristics on officer behavior, and little empirical attention was placed on whether the neighborhood context influenced officers' perceptions. Thus, the psychological mechanisms underlying the effects they observed remain unclear.

## THE CURRENT STUDY

We argue that neighborhood characteristics provide an ecological structuring of officers' normative expectations of what they can expect from community residents in particular areas. Such cognitive landscapes may set the stage for how the police perceive and interact with the public. Accordingly, the current study examined whether two neighborhood characteristics – concentrated disadvantage and homicide rates – were associated with officers' perceptions regarding the willingness of citizens to offer cooperation. It is worth noting that we are not directly testing Bottoms and Tankebe's (2012) dialogic model, but instead using it as another theoretical rationale to explain the process through which neighborhoods might influence officers' perceptions of citizen cooperation. We now turn to a description of the data used to examine this issue.

## METHODS

DATA

We used publicly available data from the Project on Policing Neighborhoods (POPN), a large-scale multi-method study funded by the National Institute of Justice. The study's purpose was to provide an in-depth examination of police-community interaction. More specifically, one

of its aims was to investigate "how patterns of policing vary among neighborhoods and what impact they have on neighborhood quality of life" (Mastrofski, Parks, & Worden, 2000, p. 1). Data were collected in two cities: Indianapolis, Indiana in 1996 and St. Petersburg, Florida in 1997. At the time of the study, Indianapolis (377,723 residents) and St. Petersburg (240,318 residents) were the thirteenth and sixty-fifth most populated cities, respectively, in the United States (Mastrofski Snipes, Parks, & Maxwell, 2000). A wide range of methods was used to collect the data, including in-person surveys of officers and contextual measures from the U.S. Census Bureau.

SAMPLE

The sample consisted of patrol officers in both the Indianapolis and St. Petersburg police departments. The Indianapolis Police Department (IPD) employed 1,013 full-time sworn officers with 416 (41%) assigned to patrol, while the St. Petersburg Police Department (SPD) was comprised of 505 officers with 246 (49%) assigned to patrol. Trained members of the research team administered structured survey questionnaires to the officers. Three hundred and ninety-eight out of the 416 patrol officers from the IPD were surveyed, resulting in a 93% response rate. In addition, 240 out of the 246 patrol officers from the SPD were surveyed, producing a 98% response rate (see Mastrofski et al., 2000; Terrill, Paoline, & Manning, 2003 for further description of the POPN data).

DEPENDENT VARIABLE

The outcome variable of interest was *officers' perceptions of citizen cooperation*. The variable was measured using an additive index that summed the responses to three close-ended survey questions: "How many citizens in your beat: 1) would call the police if they saw something suspicious, 2) would provide information about a crime if they knew something and

were asked about it by police, and 3) are willing to work with the police to try to solve neighborhood problems?" The response categories for each item ranged from 1 ("none") to 4 ("most") (the response categories as well as the mean and standard deviation for each item are presented in Appendix A). Principal component analysis was used to evaluate dimensionality, and the results showed that the three items loaded on a single construct ($\lambda$ = 2.63, pattern loadings > .92). The scale exhibited a high degree of internal consistency (Cronbach's $\alpha$ = .93; mean inter-item r = .82), and ranged from 4 to 12 with a mean of 9.46 (SD = 1.81). Higher values signify that an officer perceived higher levels of citizen cooperation in his/her patrol beat. Summary statistics for each of the variables are presented in Table 1.

(TABLE 1 ABOUT HERE)

INDEPENDENT VARIABLES

Two patrol beat characteristics – concentrated disadvantage and homicide rates – were examined in this study as structural indicators. According to Mastrofski and colleagues (2002: 528), "Each city drew beat boundaries to conform as closely as possible to existing neighborhood boundaries." As such, the patrol beat unit of analysis essentially served as a proxy for "neighborhoods."[3] A total of 98 patrol beats were represented in the data: 50 in Indianapolis and 48 in St. Petersburg. Structural measures were derived from the U.S. Census data, which the original research team then apportioned to the patrol beat level. Each patrol officer in the sample was linked to a specific patrol beat through questions on the officer survey.[4] Officers were prompted to focus on one of twenty-four beats (12 in Indianapolis and 12 in St. Petersburg), and they identified their normally assigned beat as one of those twenty-four if they had been assigned to it for at least one-quarter of their time in the last six months. If, however, they had not, then officers identified their current beat assignment outside of those twenty-four. Nearly three-

14

quarters (74%) of the officers in the sample reported that they had spent at least one-half of their time in their normally assigned beat within the last six months, with just shy of one-half (48%) of officers spending "all or nearly all" of their time in their normally assigned beat within the last six months.

The publicly available POPN data provide a summated economic disadvantage index that includes the following three items: the percentage of the population that falls below the poverty level, the percentage of unemployed residents, and the percentage of female-headed households with children. These items were summed and cannot be disaggregated in the public data. The data also include a separate measure for the patrol beat's percentage of minority residents. However, previous studies (primarily by POPN's principal investigators and project managers), which had access to the individual economic disadvantage and the percent minority items, reported the measure to represent a single latent construct ($\lambda = 3.07$; pattern loadings > .80; see, e.g., Terrill & Reisig, 2003). The patrol beat's percentage of minority residents was highly correlated with this economic disadvantage index ($r = .76$; $p < .01$). Thus, following prior work that used the same data and measures (Mastrofski et al., 2002; Terrill & Reisig, 2003), we combined the economic disadvantage index with the percentage of minority residents into a standardized four-item *concentrated disadvantage* weighted factor score (mean = 0; *SD* = 1).

*Homicide rate* is the ratio of police-recorded murders in a patrol beat per 1,000 residents during 1995 for Indianapolis and 1996 for St. Petersburg.[5] The measure, unlike that of concentrated disadvantage, had a small missing data issue; homicide rates in 18 beats were unable to be calculated, resulting in measures for 80 out of the 98 total patrol beats. While originally positively skewed, a natural log transformation successfully normalized the variable's distribution (skewness = -.70).

CONTROL VARIABLES

A number of individual-level officer characteristics were included as statistical controls. *Minority race/ethnicity* was measured using a dummy variable indicating whether the officer was a member of a minority racial/ethnic group (1 = yes; 0 = no)[6]; 21.6% of the officers were categorized as "minority" (n = 137). Officer sex was measured using another dummy variable (1 = male; 0 = female); 85.0% of the officers were male (n = 542). Officer education level was a dummy variable indicating whether the officer held at least an *associate's degree* (1 = yes); 58.0% of the officers had earned such a degree (n = 368).

Officers are not randomly assigned to beats. Departmental policy may be based on seniority, where more experienced officers are rewarded with "first choice" of which district or beat to work in. One way to control for a potential selection effect is by accounting for officer tenure. *Years experience* was measured by the total number of years that an officer had been employed as a sworn law enforcement officer; non-integers were truncated to the closest whole number. A site dummy variable was also included to control for the department in which an officer worked (1 = *Indianapolis*; 0 = St. Petersburg); 62.4% of the sample was employed by IPD.

Research suggests that organizational justice motivates employees to engage in behaviors that benefit their organization and mission (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Most police agencies strive to work with the community and gain citizen cooperation. Within the context of policing, organizational justice has been found to impact officers' attitudes and orientations toward their job (Nix & Wolfe, 2017; Tankebe, 2014; Tankebe & Meško, 2015; Wolfe & Nix, 2016a). For example, Bradford and Quinton (2014) showed that officers who perceived their superiors to be more organizationally fair were more

committed to agency goals and had less cynical orientations (see also, Bradford, Quinton, Myhill, & Porter, 2014; Trinkner, Tyler, & Goff, 2016). In this way, organizational justice may partially explain officers' attitudes toward citizen cooperation. Officers who work within an environment where they are treated fairly by supervisors and feel supported by their agency may be more receptive to working with the community (see, e.g., Myhill & Bradford, 2013) and trustful that citizens will cooperate with law enforcement. Accordingly, we controlled for *organizational justice* with an additive index that summed an officer's responses to three questions: "When an officer does a particularly good job, how likely is it that top management will publicly recognize his or her performance?," "When an officer gets written up for a minor violation of the rules, how likely is it that he or she will be treated fairly?," and "When an officer contributes to a team effort rather than look good individually, how likely is it that top management here will recognize it?" The response categories ranged from 1 ("very unlikely") to 4 ("very likely"). Principal component analysis revealed that the three items loaded onto a single component ($\lambda$ = 1.92, pattern loadings > .77). The scale exhibited an acceptable degree of internal consistency (Cronbach's $\alpha$ = .72; mean inter-item r = .46). Higher values signify that an officer had more favorable views of upper management.

ANALYTIC STRATEGY

Given that patrol beat characteristics were used to predict officer perceptions of citizen cooperation at the individual level, we sought to use a hierarchical modeling strategy (Raudenbush & Bryk, 2002). Upon further investigation of the data, however, there was a significant issue with the nature of "nesting" in the dataset. Aside from those patrol beats serving "downtown" and other high call volume areas, many beats had fewer than 10 officers currently working in them – violating the commonly accepted requirement of having a minimum of ten

observations of a level-1 variable for estimating hierarchical linear models (Mok & Flynn, 1998). Rather than excluding beats with fewer than 10 officers or risk incorrectly employing a hierarchical modeling strategy with fewer than 10 level-1 observations, an alternative modeling strategy was used. Specifically, officer perceptions of citizen cooperation were regressed on the patrol beat characteristics – concentrated disadvantage and homicide rate – using a series of ordinary least squares (OLS) regression equations. All regression equations used robust standard errors that adjusted for clustering in patrol beats. By using the cluster function in Stata, we were able to correct for any heteroscedasticity caused by the non-independence of observations (i.e., clustering in patrol beats).

Several model diagnostic procedures were performed to ensure that the parameter estimates were unbiased. Looking first at the zero-order correlations in Table 2, none of the correlations approached the traditional .70 threshold as an indicator of potentially problematic collinearity (Licht, 1995). In addition, variance inflation factors (VIF) were all below 1.09 (see Kennedy, 1992).

## RESULTS

BIVARIATE CORRELATIONS

Table 2 provides zero-order correlations for the variables of interest. Focusing on the hypothesized relationships, a patrol beat's level of concentrated disadvantage (r = -.50) and homicide rate (r = -.19) were both correlated with officers' perceptions of citizen cooperation in the expected direction: officers who worked in patrol beats characterized by higher levels of concentrated disadvantage and homicide rates tended to believe citizens were less cooperative. We now turn to the multivariate analyses for a more rigorous examination of these relationships.

(TABLE 2 ABOUT HERE)

MULTIVARIATE ANALYSES

Table 3 presents the results from three OLS regressions models, which examined the influence of patrol beat characteristics on officers' perceptions of citizen cooperation. In model 1, officers' perceptions of citizen cooperation were regressed onto concentrated disadvantage and the statistical controls. As a whole, the equation explained 28% of the variation in the outcome variable ($R^2$ = .28). The model revealed a negative association between concentrated disadvantage and officers' perceptions of citizen cooperation ($b$ = -.83). Officers working in patrol beats characterized by higher levels of concentrated disadvantage were more likely to believe citizens are uncooperative, net of relevant control variables for officers' socio-demographic backgrounds and perceptions of organizational justice. The same pattern of results emerged in Model 2, which regressed officers' perceptions of citizen cooperation on homicide rate ($b$ = -.03). Higher homicide rates appear to provide officers with cognitive landscapes that prime them to expect less citizen cooperation. Model 3 examined the impact of both concentrated disadvantage and homicide rates on officers' perceptions of citizen cooperation. Patrol beats with higher levels of concentrated disadvantage remained associated with more negative views among the respondent officers ($b$ = -.77); however, a patrol beat's homicide rate no longer exerted a significant effect once concentrated disadvantage was included in the model.[7]

(TABLE 3 ABOUT HERE)

**DISCUSSION**

Social context matters to criminologically relevant outcomes. Poor neighborhood structural conditions, for example, set the stage for citizens' negative orientations toward law enforcement and the law (Reisig & Parks, 2000; Sampson & Bartusch, 1999; Weitzer, 2000).

Moreover, such ecological conditions have been found to reduce citizen cooperation with police (Baumer, 2002; Reisig et al., 2004). Desmond and colleagues (in press) recently discovered substantial reductions in citizen crime reporting behavior after a high-profile police violence incident was publicized; residents of Milwaukee's disadvantaged black neighborhoods were far less likely to contact the police to report crime/victimization, resulting in approximately 22,000 fewer calls for service over a year. In short, structural context affects both citizens' perceptions and behavior as they relate to the police.

We also know that environmental factors impact police officer behavior. In communities characterized by concentrated disadvantage, in particular, it is more common to see police misconduct (Kane, 2002), use of force (Lee et al., 2014 Smith, 1986; Terrill & Reisig, 2003), stops, searches, and arrests (Fagan & Davies, 2000), and disrespect toward citizens (Mastrofski et al., 2002). Thus, neighborhoods matter for police behaviors, and residents of disadvantaged areas receive less favorable treatment and outcomes. Our study added to the conversation regarding the theoretical reasons why this may be the case (see Kane, 2002; Klinger, 1997 for other examples). We showed here that there is an ecological structuring of cognitive landscapes that shape officers' perceptions of citizen cooperation. Higher levels of concentrated disadvantage were negatively associated with perceptions of citizen cooperation. Our study, therefore, suggests that one plausible reason for differential police behavior is that officers are cognitively primed to have negative orientations toward citizens in disadvantaged communities before even interacting with an individual from such a neighborhood. With this result in mind, there are several issues worth discussing further.

First, if some police officers already have low expectations of residents in disadvantaged communities, this may cause them to be less willing to offer their best police work. The problem

with such ecological structuring of police perceptions is that negative orientations may be generalized to the entire community. If officers do not believe that residents will offer cooperation, they may be less willing to provide the types of services such communities need. For example, recent events over the past few years have underscored the strained nature of police relations with minority neighborhoods (Kochel, 2017; Pyrooz et al., 2016). One strategy for improving community trust in the police is for officers to strive for procedural justice (Ramsey & Robinson, 2015; Tyler, 2006). Yet, in the areas that need it the most, officers may be less likely to emphasize procedural fairness (see also, Pew Research Center, 2017). This may encourage a self-fulfilling cycle that could plague the dialogic model of legitimacy. Residents in disadvantaged communities distrust the police, the police believe residents in these areas are unwilling to cooperate and help improve community conditions, and, in turn, this perpetuates a cycle of mistrust. We need empirical evidence concerning this possibility—are police officers in disadvantaged, crime-ridden, minority communities less likely to use procedural fairness when interacting with citizens? The implications of such research extend beyond theory—officers' willingness to use procedural fairness impacts both community relations and public safety.

On that point, our findings have implications for Bottoms and Tankebe's (2012) dialogic model of legitimacy. A perceived lack of cooperation from the public is likely interpreted by police as a challenge to their legitimacy claim. Lack of cooperation, regardless of its sources, is likely perceived by police officers as a lack of trust and/or apathy from the public. Ultimately, this could potentially hinder officers' self-legitimacy—partially blocking the confidence they have in their own authority. Future research is needed to determine whether this is indeed the case. Does lack of public cooperation lead to less self-legitimacy among the police? Indeed, if this is the case, such a relationship may help further explain differential police behaviors and

treatment in disadvantaged communities described earlier. If the public does not cooperate with the police, officers may become less confident in their authority as the dialogic model would anticipate, and, in turn, they may not provide the community with their best police work. They may be less proactive, less willing to use procedural justice, and more likely to render undesirable outcomes (Bradford & Quinton, 2014; Tankebe & Meško, 2015; Wolfe & Nix, 2016a). Moreover, they may be less inclined to work with community members to build mutual trust between the police and public—the root of the legitimacy crisis facing American policing today.

Our findings also have important implications for the ongoing debate on police implicit bias – unconscious mental processes that may influence human behavior (Fiske & Taylor, 1991). Essentially, the human mind cannot consciously process all of the information it is constantly inundated with, and so it relies on heuristics in order to process information more quickly and efficiently (Kahneman, 2011). Implicit bias has recently been offered as a possible explanation for racial disparities in the use of deadly force by police (Nix, Campbell, Byers, & Alpert, 2017) as well as procedurally unfair treatment of minorities by police (Trinkner & Goff, in press). One source of such implicit biases may be the structural characteristics of the communities the police serve.

The ecological structuring of officers' perceptions of community members provides the cognitive landscape for what types of behaviors they believe they can expect from residents. Concentrated disadvantage and higher crime rates may signal to officers that the community does not care about its own well-being (whether such a perception is correct or not). Because such structural impediments overlap with racial composition, minority communities may provide officers an implicit visual heuristic that they can expect to encounter dangerous and

uncooperative residents in such neighborhoods. In this way, the ecological structuring of officers' perceptions of communities may implicitly bias their policing activities. Their orientation toward the community is colored by the racial composition of its residents. Officers may be implicitly interpreting black neighborhoods as inherently dangerous and uncooperative because of such visual cues and mental shortcuts (see also Hamilton & Gifford, 1976; Smith & Alpert, 2007). It is important to note, however, that a recent meta-analysis suggests that implicit bias does not necessarily lead to explicit biased behavior (Forscher et al., 2017).

We have advanced our understanding of the role of neighborhood characteristics in shaping officers' perceptions of public cooperation, but there are issues that provide opportunities for future research. First, the data we used are now twenty years old. Policing has experienced notable changes since the mid-1990s, including a number of technological advances such as conducted energy devices (e.g., TASERs; Terrill & Paoline, 2012) and officer body-worn cameras (White, 2014). We argue, however, that the theoretical assumptions that this study is based on should apply across time and space. The nature and structure of policing remains the same today as it was when the data were collected. Officers are located in territorial based units (Bittner, 1967; 1970; Rubinstein, 1973) on a semi-permanent basis (Bureau of Justice Statistics, 2001; Paoline & Terrill, 2014). Therefore, they are embedded within communities and regularly interact with area residents. We argue the findings are particularly applicable to today's current police legitimacy crisis, with concerns having been raised regarding apparent increases in crime, "de-policing," the "Ferguson effect," and the "war on cops" (Morgan & Pally, 2016; Maguire, Nix, & Campbell, 2016; Pyrooz et al., 2016; Rosenfeld, 2016). Our results improve our understanding of variation in officers' perceptions of citizens and shed light on one potential reason why such problems may be occurring. However, it is still important for replication

research to be conducted using samples of officers from today's era of policing—one characterized by social media and viral videos (Brown, 2016; Wolfe & Nix, 2016b). Our study highlights the need for a renewed focus on officer perceptions, particularly as they relate to neighborhood stereotyping and ecological contamination which can result in overgeneralizations to all members of a community (Werthman & Piliavan, 1967). Furthermore, we were unable to account for officers' past experiences with citizens, which likely play a key role in whether they believe citizens will cooperate (Toch, 1996; Van Maanen, 1978). Future research could build upon the current study by determining whether an ecological structuring of officers' perceptions of citizen cooperation withstands the potential confounding influence of officers' attitudes concerning previous citizen contact.

In the end, neighborhood context matters to the police. Research has long observed that police behavior is not uniform across all walks of society, yet to date empirical evidence as to *why* this is so has been scant. Our findings suggest one reason may be that police officers working in disadvantaged neighborhoods view residents as less cooperative. Officers may furthermore interpret this perceived unwillingness to cooperate as a challenge to their legitimacy, which might ultimately undermine the confidence they have in their authority (Bottoms & Tankebe, 2012). This is an important consideration for police supervisors in today's world. For example, Wolfe and Nix (2017) recently found that officers with greater self-legitimacy were less sensitive to procedural injustice from their supervisors, while Nix and Wolfe (2016) showed that organizational fairness shielded officers from various manifestations of the Ferguson effect. Collectively, this begs the question – what about those officers assigned to areas characterized by disadvantage who also believe their agency treats them unfairly? The dialogic model suggests these officers would have low levels of self-legitimacy – and would in turn be less likely to use

procedural justice (Bradford & Quinton, 2014) in the very neighborhoods that need it the most. Indeed, in response to increasing challenges to their legitimacy, officers might withdraw from proactive policing (Morgan & Pally, 2016). Such a breakdown in the legitimacy dialogue would be catastrophic for police-community relations during a tumultuous period in American history. Thus, it is important for police agencies to incorporate organizational fairness into their management philosophy at every level so as to ensure that their officers remain equipped to do their jobs effectively. We hope that by demonstrating evidence of the ecological structuring of officers' orientations toward the public, our study will spark further research on this topic.

[1] Paoline and Terrill (2014) have discussed officer attitudinal formation at length in relation to police culture -a confluence of themes and ideational components (see also Crank, 2004). These themes include officers' perceptions of their occupational role, citizens, and supervisors/leadership in the department. In lieu of discussing culture, which is often viewed as abstract and varied, we take more a specific view of officer perceptions of citizen cooperation. There is a lack of research examining how neighborhoods and the broader social context in which one works influences officer perceptions.

[2] This would be unfortunate because recent studies suggest that officers with greater self-legitimacy are better cops: they are more committed to agency goals (Tankebe, 2010), they feel more obligated to obey their supervisors (Trinkner, Tyler, & Goff, 2016), they are less reliant on coercive force to gain citizen compliance (Tankebe & Meško, 2015), and they express greater willingness to use procedural fairness when interacting with citizens (Bradford & Quinton, 2014). Studies have also shown that officers with higher levels of self-legitimacy are more willing to engage in community partnership (Wolfe & Nix, 2016a) and are less sensitive to the ill effects of procedural injustice by their supervisors (Wolfe & Nix, 2017).

[3] Prior research using the POPN data has used the terms "patrol beat" and "neighborhood" interchangeably (e.g., Mastrofski et al., 2002; Reisig & Parks, 2000). The precedent for using the two terms synonymously was set in previous studies (Skogan & Hartnett, 1997; Smith, 1986). However, there are potential differences in the areas described as police-designated "beats" and Census-designated "neighborhoods." The challenge is to quantitatively assess the extent to which patrol beats and census tracts overlap in a given department. We recognize this limitation, which is why we simply call the patrol beats a proxy for neighborhoods. It is important to note, however, that patrol beats, not neighborhoods as defined by Census boundaries, are how departments geographically divide and differentiate space. As such, our unit of analysis—patrol beat—is arguably more appropriate for examining contextual influences on officers' perceptions than alternative aerial units.

[4] Five variables from the officer survey portion of the data were used to construct the officer's beat assignment identifier. They include "SITE" to determine the department (Indianapolis or St. Petersburg), "INDIST" (Indianapolis) and "SPDIST" (St. Petersburg) to determine the officer's current district assignment, and "IBEAT" (Indianapolis) and "ISPCPA" (St. Petersburg) to determine the officer's beat nested within a particular district. We cannot account for the length of time a respondent worked in his/her patrol beat because such information is not available in the data.

[5] This measure is not available in the publicly available data. However, it was provided by a researcher who was affiliated with the project.

[6] Because there were so few Hispanic/Latino (n = 4), Asian (n = 4), and "other" minority (n = 20) officers, they were all combined with black officers (n = 109).

[7] One of the anonymous reviewers pointed out that a number of references are made to a neighborhood-perceptual-behavioral link without testing officer actions. While our primary

research focus was to explore officer perceptions at the individual level, and despite the fact that only one-half of the officers surveyed were observed interacting with citizens in the systematic social observation portion of the POPN data, a supplemental analysis was conducted to test the neighborhood-perceptual-behavioral link at the encounter level. A series of multi-level logistic regression models were fitted to examine whether officers provided comfort to citizens during encounters (1 = "yes"; 0 = "no") – a theoretically relevant variable that was used in a previous study of the POPN data (DeJong, 2004).  Officers' use of comforting behavior significantly varied across the patrol beats in which the encounter took place, and officers' perceptions of citizen cooperation were significantly associated with whether officers provided comforting behavior ($b$ = .07; $p$ < .01).  Officers who reported more positive perceptions of citizen cooperation were more likely to display comforting behavior.  We thank the reviewer for this suggestion.

# REFERENCES

Anderson, E. (1999). *Code of the street: Decency, violence, and the moral life of the inner city*. New York: W.W. Norton & Company.

Baumer, E. P. (2002). Neighborhood disadvantage and police notification by victims of violence. *Criminology, 40(3)*, 579-616.

Besbris, M., Faber, J. W., Rich, P., & Sharkey, P. (2015). Effect of neighborhood stigma on economic transactions. *Proceedings of the National Academy of Sciences*, *112*(16), 4994-4998.

Bittner, E. (1967). The police on skid-row: A study of peace keeping. *American Sociological Review*, *32*(5), 699-715.

Bittner, E. (1970). *The functions of the police in modern society*. Washington, DC: Government Printing Office.

Bottoms, E. A., & Tankebe, J. (2012). Beyond procedural justice: A dialogic approach to legitimacy in criminal justice. *Journal of Criminal Law and Criminology*, *102*(1), 119-170.

Bradford, B., & Quinton, P. (2014). Self-legitimacy, police culture and support for democratic policing in an English constabulary. *British Journal of Criminology*, *54*(6), 1023-1046.

Bradford, B., Quinton, P., Myhill, A., & Porter, G. (2014). Why do 'the law'comply? Procedural justice, group identification and officer motivation in police organizations. *European Journal of Criminology*, *11*(1), 110-131.

Braga, A. A., Weisburd, D. L., Waring, E. J., Mazerolle, L. G., Spelman, W., & Gajewski, F. (1999). Problem-oriented policing in violent crime places: A randomized controlled experiment. *Criminology*, *37*(3), 541-580.

Brown, G. R. (2016). The blue line on thin ice: Police use of force modifications in the era of cameraphones and YouTube. *British Journal of Criminology*, 56, 293-312.

Brunson, R. K. (2007). "Police don't like black people": African-American young men's accumulated police experiences. *Criminology & Public Policy*, *6*(1), 71-102.

Brunson, R. K., & Gau, J. M. (2014). Race, place, and policing the inner-city. In M. D. Reisig & R. J. Kane (Eds.), *The oxford handbook of police and policing* (pp. 362- 382). New York: Oxford University Press.

Bureau of Justice Statistics. (2001). *Community policing in local police departments 1997 and 1999*. Washington, DC: US Department of Justice.

Bursik, R. J., & Grasmick, H. G. (1993). *Neighborhoods and crime: The dimensions of effective community control*. New York: Macmillan.

Carr, P. J., Napolitano, L., & Keating, J. (2007). We never call the cops and here is why: A qualitative examination of legal cynicism in three Philadelphia neighborhoods. *Criminology, 45*, 445-480.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86,* 278–321.

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86,* 425–445.

Crank, J. P. (2004). *Understanding police culture* (2nd ed.) Cincinnati, OH: Anderson.

Crawford, T. J. (1973). Police overperception of ghetto hostility. *Journal of Police Science and Administration*, *1*(2), 168-174.

Decker, S. H. (1981). Citizen attitudes toward the police: A review of past findings and suggestions for future policy. *Journal of Police Science and Administration, 9*, 80-87.

DeJong, C. (2004). Gender differences in officer attitude and behavior: Providing comfort to citizens. *Women & Criminal Justice*, *15*(3/4), 1-32.

Desmond, M., Papachristos, A. V., & Kirk, D. S. (in press). Police violence and citizen crime reporting in the black community. *American Sociological Review.*

Fagan, J., & Davies, G. (2000). Street stops and broken windows: Terry, race, and disorder in New York City. *Fordham Urban Law Journal*, *28*, 457-504.

Fiske, S. T. & Taylor, S. E. (1991). *Social cognition.* New York: McGraw Hill.

Forscher, P. S., Lai, C. K., Axt, J. R., Ebersole, C. R., Herman, M., Devine, P. G., & Nosek, B. A. (2017). A meta-analysis of change in implicit bias. Unpublished manuscript. Retrieved from:https://www.researchgate.net/publication/308926636_A_Meta-Analysis_of_Change_in_Implicit_Bias.

Fridell, L., & Lim, H. (2016). Assessing the racial aspects of police force using the implicit-and counter-bias perspectives. *Journal of Criminal Justice, 44,* 36-48.

Gau, J. M., & Brunson, R. K. (2010). Procedural justice and order maintenance policing: A study of inner-city young men's perceptions of policy legitimacy. *Justice Quarterly*, *27*(2), 255-279.

Gau, J. M., Corsaro, N., Stewart, E. A., & Brunson, R. K. (2012). Examining macro-level impacts on procedural justice and police legitimacy. *Journal of Criminal Justice, 40*, 333-343.

Hamilton, D. L. & Gifford, R. K. (1976). Illusory correlation in interpersonal perception: A cognitive basis of stereotypic judgments. *Journal of Experimental Social Psychology*, 12, 392-407.

Hassell, K. D. (2007). Variation in police patrol practices: The precinct as a suborganizational Level of analysis. *Policing: An International Journal of Police Strategies & Management*, *30*(2), 257-276.

Hurst, Y. G., Frank, J., & Browning, S. L. (2000). The attitudes of juveniles toward the police: A comparison of black and white youth. *Policing: An International Journal of Police Strategies & Management*, *23*(1), 37-53.

James, L., James, S. M., & Vila, B. J. (2016). The reverse racism effect: Are cops more hesitant to shoot black than white suspects? *Criminology & Public Policy,* 15(2), 1-23.

Johnson, B. D. (2005). Contextual disparities in guidelines departures. *Criminology*, *43*(3), 761-797.

Kahneman, D. (2011). *Thinking fast and slow.* New York, NY: Farrar, Straus and Giroux.

Kane, R. J. (2002). The social ecology of police misconduct. *Criminology, 40*(4), 867-896.

Kane, R. J. (2005). Compromised police legitimacy as a predictor of violent crime in structurally disadvantaged communities. *Criminology*, *43*(2), 469-498.

Kane, R. J., Gustafson, J. L., & Bruell, C. (2013). Racial encroachment and the formal control of space: Minority group-threat and misdemeanor arrests in urban communities. *Justice Quarterly*, *30*(6), 957-982.

Kennedy, P. (1992). A guide to econometrics. Cambridge, MA: MIT Press.

Klinger, D. A. (1997). Negotiating order in patrol work: An ecological theory of police response to deviance. *Criminology, 35*, 277-306.

Kochel, T. R. (2017). Explaining racial differences in Ferguson's impact on local residents' trust and perceived legitimacy: Policy implications for police. *Criminal Justice Policy Review*. Advance online publication. doi: 10.1177/0887403416684923.

Kubrin, C. E., & Stewart, E. A. (2006). Predicting who reoffends: The neglected role of neighborhood context in recidivism studies. *Criminology*, *44*(1), 165-197.

Lee, H., Vaughn, M. S., & Lim, H. (2014). The impact of neighborhood crime levels on

police use of force: An examination at micro and meso levels. *Journal of Criminal Justice*, *42*(6), 491-499.

Licht, M. H. (1995). Multiple regression and correlation. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 19–64). Washington, DC: American Psychological Association.

Maguire, E. R., Nix, J., & Campbell, B. A. (2016). A war on cops? The effects of Ferguson on the number of US police officers murdered in the line of duty. *Justice Quarterly*. Advance online publication. doi: 10.1080/07418825.2016.1236205.

Manning, P. K. (1978). The police: Mandate, strategies, and appearances. In P. K. Manning & J. Van Maanen (Eds.), *Policing: A view from the street* (pp. 7-31). Santa Monica, CA: Goodyear.

Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge: Harvard University Press.

Mastrofski, S. D., Parks, R. B., & Worden, R. E. (2000). The Project on Policing Neighborhoods: An overview for data users. Washington, DC: National Institute of Justice.

Mastrofski, S. D., Reisig, M. D., & McCluskey, J. D. (2002). Police disrespect toward the public: An encounter-based analysis. *Criminology*, *40*(3), 519-552.

Mastrofski, S. D., Snipes, J. B., Parks, R. B., & Maxwell, C. D. (2000). The helping hand of the law: Police control of citizens on request. *Criminology*, *38*(2), 307-342.

Mears, D. P., Wang, X., Hay, C., & Bales, W. D. (2008). Social ecology and recidivism: Implications for prisoner reentry. *Criminology*, *46*(2), 301-340.

Meehan, A. J., & Ponder, M. C. (2002). Race and place: The ecology of racial profiling African American motorists. *Justice Quarterly*, *19*(3), 399-430.

Mok, M., & Flynn, M. (1998). Effect of catholic school culture on students' achievement in the Higher School Certificate Examination: A multilevel path analysis. Educational Psychology, 18(4), 409-432.

Morgan, S. L., & Pally, J. A. (2016). *Ferguson, Gray, and Davis: An analysis of recorded crime incidents and arrests in Baltimore city, March 2010 through December 2015*. Baltimore, MD: Johns Hopkins University. Retrieved from http://socweb.soc.jhu.edu/faculty/morgan/reports.html

Myhill, A., & Bradford, B. (2013). Overcoming cop culture? Organizational justice and police officers' attitudes toward the public. *Policing: An International Journal of Police Strategies & Management*, *36*(2), 338-356.

Nix, J. (2015a). Do the police believe that legitimacy promotes cooperation from the public? *Crime & Delinquency* (forthcoming). DOI: 10.1177/0011128715597696.

Nix, J. (2015b). Police perceptions of their external legitimacy in high and low crime areas of the community. *Crime & Delinquency* (forthcoming). DOI: 10.1177/0011128715620627.

Nix, J., Campbell, B. A., Byers, E. H., & Alpert, G. P. (2017). A bird's eye view of civilians killed by police in 2015: Further evidence of implicit bias. *Criminology & Public Policy, 16*(1), 1 – 32. doi: 10.1111/1745-9133.12269.

Nix, J., & Wolfe, S. E. (2017). The impact of negative publicity on police self-legitimacy. *Justice Quarterly* (forthcoming). DOI: 10.1080/07418825.2015.1102954.

Nix, J., Wolfe, S. E., Rojek, J., & Kaminski, R. J. (2015). Trust in the police the influence of procedural justice and perceived collective efficacy. *Crime & Delinquency, 61(4)*, 610-640.

Paoline III, E. A., & Terrill, W. (2014). *Police culture: Adapting to the strains of the job*. Durham, NC: Carolina Academic Press.

Peterson, R. D., & Krivo, L. J. (2010). *Divergent social worlds: Neighborhood crime and the racial-spatial divide*. New York: Russell Sage Foundation.

Petrocelli, M., Piquero, A. R., & Smith, M. R. (2003). Conflict theory and racial profiling: An empirical analysis of police traffic stop data. *Journal of Criminal Justice*, *31*(1), 1-11.

Pew Research Center. (2017). *Behind the Badge: Amid protests and calls for reform, how police view their jobs, key issues and recent fatal encounters between blacks and police*. Retrieved from http://www.pewsocialtrends.org/2017/01/11/behind-the-badge/?utm_content=buffer33b9f&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

Pyrooz, D. C., Decker, S. H., Wolfe, S. E., & Shjarback, J. A**.** (2016). Was there a Ferguson Effect on crime rates in large U.S. cities? *Journal of Criminal Justice*, *46*(1), 1-8.

Raudenbush, S. W., & Bryk, A. S. (2002). Hierarchical linear models: Applications and data analysis methods (2nd ed.). Thousand Oaks, CA: Sage.

Reisig, M. D., McCluskey, J. D., Mastrofski, S. D., & Terrill, W. (2004). Suspect disrespect toward the police. *Justice Quarterly*, *21*(2), 241-268.

Reisig, M. D., & Parks, R. B. (2000). Experience, quality of life, and neighborhood context: A hierarchical analysis of satisfaction with police. *Justice Quarterly*, *17*(3), 607- 630.

Reisig, M. D., & Parks, R. B. (2003). Neighborhood context, police behavior and satisfaction with police. *Justice Research and Policy*, *5*(1), 37-65.

Rosenbaum, D. P., Schuck, A. M., Costello, S. K., Hawkins, D. F., & Ring, M. K. (2005). Attitudes toward the police: The effects of direct and vicarious experience. *Police Quarterly, 8(3)*, 343-365.

Rosenfeld, R. (2016). *Documenting and Explaining the 2015 Homicide Rise: Research Directions*. Washington, DC: US Department of Justice.

Rubinstein, J. (1973). *City police*. New York: Farrar, Straus & Giroux.

Sampson, R. J. (2012). *Great American city: Chicago and the enduring neighborhood effect*. Chicago: University of Chicago Press.

Sampson, R. J., & Bartusch, D. J. (1998). Legal cynicism and (subcultural?) tolerance of deviance: The neighborhood context of racial differences. *Law & Society Review, 32*, 777-804.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology*, *94*(4), 774-802.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *227*, 916-24.

Schafer, J. A., Huebner, B. M., & Bynum, T. S. (2003). Citizen perceptions of police services: Race, neighborhood context, and community policing. *Police quarterly, 6(4)*, 440-468.

Schuck, A. M., Rosenbaum, D. P., & Hawkins, D. F. (2008). The influence of race/ethnicity, social class, and neighborhood context on residents' attitudes toward the police. *Police Quarterly, 11(4)*, 496-519.

Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas*. Chicago: University of Chicago Press.

Skogan, W. G, & Hartnett, S. M. (1997). *Community policing, Chicago style*. New York: Oxford University Press.

Smith, D. A. (1986). The neighborhood context of police behavior. In A. J. Reiss, Jr. & M. Tonry (Eds.), *Communities and crime* (pp. 313-341). Chicago: University of Chicago Press.

Smith, M. R. & Alpert, G. P. (2007). Explaining police bias: A theory of social conditioning and illusory correlation. *Criminal Justice and Behavior,* 34(10), 1262-83.

Sobol, J. J. (2010). The social ecology of police attitudes. *Policing: An International Journal of Police Strategies & Management*, *33*(2), 253-269.

Sobol, J. J., Wu, Y, & Sun, I. Y. (2013). Neighborhood context and police vigor: A multi-level analysis. *Crime & Delinquency, 59*(3), 344-368.

Tankebe, J. (2010). Identifying the correlates of police organizational commitment in Ghana. *Police Quarterly*, *13*(1), 73-91.

Tankebe, J. (2014). Rightful authority: Exploring the structure of police self-legitimacy. In A. Liebling, J. Shapland, & J. Tankebe (Eds.), *Crime, justice and social order: Essays in honour of A. E. Bottoms* (pp. 1–30). Oxford: Oxford University Press.

Tankebe, J., & Meško, G. (2015). Police self-legitimacy, use of force, and pro-organizational behavior in Slovenia. In G. Meško & J. Tankebe (Eds.), *Trust and legitimacy in criminal justice* (pp. 261–270). New York, NY: Springer.

Terrill, W., & Paoline III, E. A. (2012). Conducted energy devices (CEDs) and citizen injuries: The shocking empirical reality. *Justice Quarterly*, *29*(2), 153-182.

Terrill, W., Paoline III, E. A., & Manning, P. K. (2003). Police culture and coercion. *Criminology*, 41(4), 1003-1034.

Terrill,W. & Reisig, M. D. (2003). Neighborhood context and police use of force. *Journal of Research in Crime and Delinquency*, *40*(3), 291-321.

Toch, H. (1996). The violence-prone officer. In W. Geller & H. Toch (Eds.), *Police violence: Understanding and controlling police abuse of force* (pp. 94-112). New Haven, CT: Yale University Press.

Trinkner, R, J. & Goff, P. A. (in press). The color of safety: The Psychology of race and policing. In B. Bradford, B. Jauregui, I. Loader, & J. Steinberg (Eds.), *The SAGE handbook of global policing.* London: Sage.

Trinkner, R., Tyler, T. R., & Goff, P. A. (2016). Justice from within: The relations between a procedurally just organizational climate and police organizational efficiency, endorsement of democratic policing, and officer well-being. Psychology, *Public Policy, & Law*, *22*(2), 158-172.

Tyler, T. R. (1994). Governing amid diversity: The effect of fair decision making procedures on the legitimacy of government. *Law and Society Review, 28,* 809-831.

Van Maanen, J. (1978). The asshole. In P. Manning & J. Van Maanen (Eds.,), *Policing: A view from the street* (pp. 221-38). Santa Monica, CA: Goodyear Publishing Company.

Wang, X., & Mears, D. P. (2010). A multilevel test of minority threat effects on sentencing. *Journal of Quantitative Criminology*, *26*(2), 191-215.

Webb, V. J., & Marshall, C. E. (1995). The relative importance of race and ethnicity on citizen attitudes toward the police. *American Journal of Police*, *14*(2), 45-66.

Weitzer, R. (2000). Racialized policing: Residents' perceptions in three neighborhoods. *Law & Society Review*, *34*(1), 129-155.

Weitzer, R., & Tuch, S. A. (2002). Perceptions of racial profiling: Race, class, and personal experience. *Criminology*, *40*(2), 435-456.

Werthman, C., & Piliavin, I. (1967). Gang members and the police. In D. Bordua (Ed.), *The police: Six sociological essays* (pp. 56-98). New York: Wiley.

White, M. D. (2014). *Police officer body-worn cameras: Assessing the evidence*. Washington, DC: Office of Community Oriented Policing Services.

Wilson, J. Q., & Kelling, G. L. (1982). Broken windows. *Atlantic Monthly*, *249*(3), 29-38.

Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago: University of Chicago Press.

Wolfe, S. E., & Nix, J. (2016a). The alleged "Ferguson Effect" and police willingness to engage in community partnership. *Law and Human Behavior*, *40,* 1-10.

Wolfe, S. E., & Nix, J. (2016b). Managing police departments in the post-Ferguson era. *Harvard Business Review*. September.

Wolfe, S. E., & Nix, J. (2017). Police officers' trust in their agency: Does self-legitimacy protect against supervisor procedural injustice? *Criminal Justice & Behavior,* 44(5), 717-732. DOI: 10.1177/0093854816671753.


Wolfe, S. E., Nix, J., Kaminski, R. J., & Rojek, J. (2016). Is the effect of procedural justice on police legitimacy invariant? Testing the generality of procedural justice and competing explanations of legitimacy. *Journal of Quantitative Criminology*, *32(2)*, 253-282.

Wu, Y., Sun, I. Y., & Triplett, R. A. (2009). Race, class or neighborhood context: Which matters more in measuring satisfaction with police? *Justice Quarterly, 26(1)*, 125-156.

Table 1. Descriptive statistics.

| Variables | Mean | St. Dev. | Minimum | Maximum |
|---|---|---|---|---|
| *Dependent variable* | | | | |
| Perceptions of Citizen Cooperation | 9.46 | 1.81 | 4.00 | 12.00 |
| *Independent Variables* | | | | |
| Concentrated Disadvantage[a] | .00 | 1.00 | -1.21 | 2.38 |
| Homicide Rate[b] | -5.85 | 7.27 | -13.82 | 2.30 |
| *Control Variables* | | | | |
| Minority[c] | .22 | -- | .00 | 1.00 |
| Male[c] | .85 | -- | .00 | 1.00 |
| Associate's Degree[c] | .58 | -- | .00 | 1.00 |
| Years of Experience | 10.44 | 7.56 | .00 | 33.00 |
| Organizational Justice | 7.58 | 2.17 | 3.00 | 12.00 |
| Indianapolis[c] | .62 | -- | .00 | 1.00 |

Note: [a] weighted factor score; [b] natural logarithm; [c] dummy variable

Table 2. Zero-order correlations.

| | $Y_1$ | $X_1$ | $X_2$ | $X_3$ | $X_4$ | $X_5$ | $X_6$ | $X_7$ | $X_8$ |
|---|---|---|---|---|---|---|---|---|---|
| $Y_1$ Perceptions of Citizen Cooperation | -- | | | | | | | | |
| $X_1$ Concentrated Disadvantage | -.50** | -- | | | | | | | |
| $X_2$ Homicide Rate[a] | -.19** | .25** | -- | | | | | | |
| $X_3$ Minority Race/Ethnicity | -.05 | .24** | .13** | -- | | | | | |
| $X_4$ Male | .01 | -.03 | .01 | -.09* | -- | | | | |
| $X_5$ Associate's Degree or Higher | -.07 | .04 | .04 | .04 | .00 | -- | | | |
| $X_6$ Years of Experience | .28 | -.31** | -.06 | -.09* | .07 | -.22** | -- | | |
| $X_7$ Organizational Justice | .05 | .02 | -.02 | -.03 | -.05 | -.09* | .05 | -- | |
| $X_8$ Indianapolis | -.17 | .13** | .28** | -.01 | -.06 | .07 | .00 | .18** | -- |

*Note*: [a]Natural logarithm; * $p < .05$; ** $p < .01$ (two-tailed test).

Table 3. The effect of neighborhood structural disadvantages on officers' perceptions of citizen cooperation.

| Variable | Model 1 | | | | Model 2 | | | | Model 3 | | | |
| | b | SE | 95% CI | β | b | SE | 95% CI | β | b | SE | 95% CI | β |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Concentrated disadvantage | -.83** | .09 | -1.01, -.64 | -.46 | -- | -- | -- | -- | -.77** | .10 | -.96, -.57 | -.42 |
| Homicide rate | -- | -- | -- | -- | -.03* | .02 | -.06, -.01 | -.15 | -.01 | .01 | -.04, .01 | -.06 |
| Minority | .36* | .18 | .01, .70 | .08 | -.04 | .21 | -.45, .36 | -.01 | .30 | .18 | -.07, .67 | .07 |
| Male | -.01 | .18 | -.37, .35 | .00 | -.05 | .21 | -.47, .37 | .00 | -.04 | .19 | -.42, .34 | -.01 |
| Associate's degree | .05 | .13 | -.20, .30 | .00 | .16 | .14 | -.13, .44 | .03 | .12 | .13 | -.14, .39 | .02 |
| Years of experience | .03** | .01 | .01, .05 | .14 | .07** | .01 | .04, .09 | .26 | .03** | .01 | .01, .06 | .14 |
| Organizational justice | .08* | .03 | .01, .14 | .10 | .08* | .04 | .01, .15 | .10 | .09* | .04 | .02, .16 | .11 |
| Indianapolis | -.42* | .16 | -.74, -.10 | -.12 | -.24 | .23 | -.69, .21 | -.07 | -.29 | .17 | -.64, .05 | -.08 |
| F Test | 27.05** | | | | 8.25** | | | | 19.24** | | | |
| Adjusted $R^2$ | .28 | | | | .11 | | | | .26 | | | |
| N | 535 | | | | 457 | | | | 457 | | | |

Note: Entries are unstandardized partial regression coefficients (b), robust standard errors (SE), 95% confidence intervals, and standardized partial regression coefficients (β).
* $p < .05$; ** $p < .01$ (two-tailed test).

Appendix A. Dependent variable individual items: "How many citizens in your beat…"

| Item | Response Sets | Mean | St. Dev. |
|---|---|---|---|
| …would call the police if they saw something suspicious?" | 1 = "none" 2 = "few" 3 = "some" 4 = "most" | 3.37 | .69 |
| …would provide information about a crime if they knew something and were asked about it by police?" | 1 = "none" 2 = "few" 3 = "some" 4 = "most" | 3.08 | .77 |
| …are willing to work with the police to try to solve neighborhood problems?" | 1 = "none" 2 = "few" 3 = "some" 4 = "most" | 3.01 | .77 |