



# Dual-process theory of racial isolation, legal cynicism, and reported crime

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**Why is neighborhood racial composition linked so strongly to police-reported crime? Common explanations include over-policing and negative interactions with police, but police reports of crime are heavily dependent on resident 911 calls. Using Sampson's concept of legal cynicism and Vaisey's dual-process theory, we theorize that racial concentration and isolation consciously and nonconsciously influence neighborhood variation in 911 calls for protection and prevention. The data we analyze are consistent with this thesis. Independent of police reports of crime, we find that neighborhood racial segregation in 1990 and the legal cynicism about crime prevention and protection it engenders have lasting effects on 911 calls more than a decade later, in 2006–2008. Our theory explains this persistent predictive influence through continuity and change in intervening factors. A source of cumulative continuity, the intensification of neighborhood racial concentration and isolation between 1990 and 2000, predicts 911 calls. Likewise, sources of change—heightened neighborhood incarceration and home foreclosures during the financial crisis in 2006–2008—also predict these calls. Our findings are consistent with legal cynicism theory's focus on neighborhood disadvantage, racial isolation, and concerns about police protection and crime prevention; they correspond less with the emphasis of procedural justice theory on police legitimacy.**

racial isolation | legal cynicism | procedural justice | incarceration | residential foreclosures

There is a paradox in minority, high-crime-rate communities: Many residents report negative experiences with police but look to them to prevent crime and protect them from it (1–6). Carr et al. (7) highlight this contradiction in their analysis of 150 narratives from Philadelphia adolescents in three high-crime neighborhoods. These youth expressed negative, hostile views about the police, but these were transitory, and many endorsed policies that included “more cops, tougher laws/stricter penalties, and tougher drug interdiction” (p. 463).

## The Paradox of Police 911 Calls in Minority Communities

Bell (8) finds a similar incongruity in interviews with poor African-American mothers from Washington, D.C. These mothers generally distrust the police but said they had called them for help with some crimes; this pattern reflects the “complex, contradictory, and ambivalent” (ref. 8, p. 321) nature of their relationships. The 911 calls are a primary source of police services (9) and police–community contact. They are high in racially isolated communities (10, 11) despite residents' expectations that the police will often fail to respond or adequately address their concerns (12).

We use a neighborhood approach to examine the paradox of resident engagement with police whom they view with skepticism or active distrust. We argue that insights from Vaisey's (13, 14) dual-process framework, combined with legal cynicism theory (15–18), can explain the paradox of reliance on police in disadvantaged minority communities. Harding and Hepburn (18) emphasize the usefulness of Vaisey's theory for neighborhood

effects, suggesting that neighborhoods influence the narratives available to residents and thus “play some role in enabling and constraining certain courses of action” (p. 53). Dual-process theory points to a collective process that explains the central role of the cultural frame of legal cynicism in 911 calls. Sampson and Bartusch (15) introduce legal cynicism to explain how African-Americans, particularly in racially isolated neighborhoods, simultaneously distrust the legal system and condemn adolescent deviance. However, legal cynicism can do more. Framed within Vaisey's (13) dual-process model, legal cynicism can explain residents' reactions to criminal behavior. Vaisey applied his theory at the individual level in contemporary settings without consideration of historical and community-level processes. However, his emphasis on nonconscious and conscious levels of collective motivation helps account for the historical persistence of the cultural frame of legal cynicism in police–community relations. Our elaboration emphasizes that historical change and cumulative continuity in disadvantaged minority community experiences (18) lead residents to simultaneously and persistently mistrust police but seek their protection and crime prevention (6).

Our argument has four parts. We first summarize Vaisey's (13) dual-process model. This model distinguishes two levels of discursive and practical consciousness that respectively involve more and less cognitive awareness and that can explain the paradox of high levels of 911 calls in minority communities.

## Significance

**Cynicism about lawlessness and police crime prevention and protection efforts is often high in predominately African-American neighborhoods, but residents persist in calling 911 and requesting police assistance. These calls continue to rise in neighborhoods that have recently experienced further increases in racial isolation, incarceration, and home foreclosures. These patterns are independent of statistical controls for an array of potentially confounding variables. The implication is that in the absence of alternatives, and despite past and continuing perceived police ineffectiveness, residents in racially isolated and disadvantaged neighborhoods will continue to call 911, seeking crime prevention and protection by police.**

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Second, we link Vaisey's theory with the macrolevel cultural schema of legal cynicism. At the neighborhood level, legal cynicism reflects a shared disbelief in the law, police, and justice system. It is high in racially isolated communities (15) but paradoxically stimulates calls for more police assistance.

Third, we consider the impact of another variable—procedural justice—commonly used to explain neighborhood crime reporting. Advanced by Tyler (19), Carr et al. (7), and others, procedural justice theory posits that residents' views about the legitimacy of the police and their trust and confidence in police explain residents' reporting of crime. However, as Sampson and Wilson (20, 21) note, microlevel phenomena such as trust and confidence may be inadequate for explaining macro-, neighborhood level variation in crime reporting. We argue that neighborhood-level legal cynicism that arises from police failures in prevention and protection more strongly influences crime reporting and undermines police-community relations in minority neighborhoods.

Fourth, we explain how structural crises of social exclusion—most recently mass incarceration and home foreclosure crises—further elaborate connections between legal cynicism and responses to crime in isolated minority communities.

Our approach yields several propositions we test with macrolevel longitudinal data from Chicago. We show how structural forces combine with legal cynicism and contribute to neighborhood variation in 911 calls for help despite distrust of police. Our results suggest police failures to prevent crime and provide protection—more than procedural legitimacy—explain America's racially troubled police-community relations.

### Dual-Process Theory of Police-Community Relations

Vaisey's (13, 14) dual-process theory builds on the widely accepted premise that thought involves two processes (22): "one fast, automatic, and largely unconscious, and one slow and deliberate, and largely conscious" (ref. 13, p. 1704). He notes that in interviews people's narratives about their thoughts are often contradictory, suggesting both processes and a divided self.

Vaisey contends survey data can unravel these discrepancies, and he uses them to explain narrative inconsistencies in teenagers' moral reasoning and educational aspirations. Appearances aside, he finds adolescents are "profoundly influenced by cultural forces in ways that they are largely unaware of and unable to articulate but that nevertheless shape their moral judgements [*sic*] and choices" (ref. 13, p. 1704). Vaisey's point is that interview-based narratives can miss motivating cultural elements in individual reasoning. He shows how survey questions uncover the motivational meaning of narratives and address apparent paradoxes by identifying underlying "enduring, internalized cultural schemas" (ref. 13, p. 1699). Vaisey explains that survey questions "tend (probabilistically) to produce a choice consistent with the underlying schema, even if the person does not understand why the choice is the most desirable" (ref. 13, pp. 1691–1692). It is the enduring, internalized nature of these schema-driven choices that make them persistent rather than transitory.

We argue that consciously discursive as well as less conscious practical forms of cognition embody but also contribute to what have been variously called "cultural frames," "schemas," and "narratives." In their summary of research on cultural mechanisms and neighborhood effects, Harding and Hepburn (23) note that people have access to an array of narratives; however, people are more often unconsciously influenced by, and consciously embrace, those that resonate with their own experiences and those of family, friends, neighbors, and valued others. As Small (24) demonstrates, neighborhood frames that provide ways to understand key features of neighborhoods are one of these key narratives. According to Vaisey (ref. 13, p. 1687), actions such as calling 911 involve "schematic associations" solidified through cumulative experiences and may involve conscious deliberation as well as less conscious schemas; these may be so

deeply and cumulatively entrenched that they are unrecognized. In America, cultural frames have historically segregated contours defined by variation in neighborhood racial composition and isolation that demarcate boundaries of community identity.

**The Role of Legal Cynicism.** Sampson (ref. 18, p. 225) argues there is a "dark side of human nature" that he calls "moral or legal cynicism." Sampson and Bartusch (ref. 15, p. 786) define legal cynicism as "general beliefs about the legitimacy of laws and social norms"; it occurs when rules of law lose their binding behavioral capacity. Kirk and Papachristos (16) note that this cultural frame develops in part because people view the police as ineffectual in providing security. Elaborated in this way, legal cynicism highlights the failure of both law and its agents—the police—to prevent unlawful behavior or provide protection. Like other cultural frames, such as collective efficacy, legal cynicism operates at the individual and neighborhood level. Sampson (18) and Kirk and Papachristos (16) have used it to understand neighborhood variation in violence; we believe it can explain neighborhood-level differences in police-community relations.

Legal cynicism is high among African-Americans (12, 15) and in African-American neighborhoods (18), as are 911 calls (11). Even though legal cynicism involves skepticism about police, residents often have little choice but to call them and other first responders. The responses are familiar: if a house is on fire, calling the Fire Department; if someone is dying, calling an ambulance; and if a crime threatens one's security, calling for police assistance. People summon police, hoping for preventive and protective results despite past disappointments. Thus, Bobo and Thompson (12) report 93% of African-Americans surveyed said they would call police if their home were burglarized, but only 35% expected the police to respond appropriately.

Rios (25) observes the police in Oakland, CA seldom responded to calls about crime in apartment complexes in racial minority buildings, a pattern consistent with Stinchcombe's (26) observation almost five decades earlier that police avoided some types of private spaces. In contrast to the public space of the street, where youth were vulnerable to arrest, Oakland police avoided housing complexes "as if this area were outside their purview" (ref. 25, p. 57). Rios (ref. 25, p. 54) calls this the "overpolicing-underpolicing paradox." The result may often be a legal cynicism among residents that, regardless of exactly how they consciously or nonconsciously process it over time, motivates calling police and hoping for better results.

**Procedural Justice or Injustice?** Procedural justice theory seeks to improve residents-police relations (23, 27–31). It argues the reformed policies and training that foster police "procedural sensitivity" would enhance police legitimacy and increase people's trust, confidence, cooperation, and reporting of crimes. Sunshine and Tyler (ref. 29, p. 20) argue that procedurally sensitive training can insulate police from "societal forces, such as demographics or economic conditions, which shape crime rates but are beyond police control." Using individual-level analyses of survey data, they conclude, "Regardless of ethnicity, people cooperate with the police when they view the police as legitimate . . . . This is not to say that the views of the various ethnic groups are identical. They are not. But the similarities are striking, and the differences are small" (ref. 29, p. 20).

In a recent review, Nagin and Telep (ref. 32, p. 22) point to the individualistic bias of procedural justice theory: "The focus of the theory . . . is the impact of individual experience on perceptions and behavior. Larger societal influences are left in the background." People do not base their perceptions of the police simply on their own experiences; instead, they draw on those of their family, friends, and neighbors. Thus, views about procedural justice can be measured as a cultural frame that varies across individuals and neighborhoods (33). Nagin and Telep's critique echoes

Sampson and Wilson's (20) concern about the individualistic fallacy that undermines much crime research: "Research conducted at the individual level rarely questions whether obtained results might be spurious and confounded with community level processes" (ref. 20, p. 44). Sampson and Wilson highlight the lack of attention given to contextual factors that complicate the relationship between race and crime. Bell (34) makes a similar observation, arguing that microlevel perceptions of procedural justice are not easily, if ever, effectively freed from their macrolevel associations with economic disadvantage and social exclusion. As a result, collective cynicism about macrolevel procedural injustice and the structural characteristics that contribute to it are more likely contributors to community patterns of police mobilization.

The methods and measures used in procedural justice research make it vulnerable to the individualistic fallacy. As noted above, Sunshine and Tyler (29) argue that successful procedurally sensitive training "frees" police from societal forces. However, most procedural justice research does not use community-level analyses but relies on individual self-reports of cooperativeness with police, alongside individual perceptual reports of procedurally just police practices. The resulting positive relationship between procedural sensitivity and crime reporting is vulnerable to bias resulting from common or "shared" method variance in individuals' reporting of independent (i.e., perceived procedural sensitivity) and dependent (i.e., cooperative calls for police assistance) variables.

There is reason to believe the positive relationship posited by procedural justice theory between police procedural sensitivity and resident crime reporting does not hold in community-level samples of disadvantaged minorities. Perceptions of criminal injustice are more often observed in residential communities of the minority poor (33) where calls for police assistance are most common (10, 11). Skepticism about but reliance on the police is the paradox with which this study began.

### Historical Dimensions of the Dual-Process Model of Police–Community Relations

The process by which cultural schemas such as legal cynicism come to operate unconsciously as well as consciously in association with minority composition and isolation of neighborhoods has deep historical roots reflecting the cumulative structured inequalities that disadvantage African-American inner-city neighborhoods (6, 15, 16, 18, 23). These include slavery, lynching, segregation, and Jim Crow laws that contributed to the 20th century Great Migration to the isolated urban ghettos of the north (6). Wilson (35) and Massey and Denton (36) trace the legacy of this cumulative history through the 1970s and 1980s and to the resulting concentration of poverty in racially isolated inner-city neighborhoods. Wilson, in particular, draws attention to how this concentration increased with movement of well-paying manufacturing jobs and upwardly mobile families out of inner-city neighborhoods. Sampson and Wilson (20, 21) posit that the concentration of poverty, segregation, isolation, and a lack of collective efficacy are primary causes of violence in African-American neighborhoods, while Kirk and Papachristos (16) demonstrate a further role of legal cynicism. We move from their focus on violence to determinants of residents' reactions to crime.

Of course, the history of race and crime in America did not end with the concentration of poverty in inner-city neighborhoods in the 1970s and 80s. It continued, for example, with the twin afflictions of mass incarceration and the housing crisis of the Great Recession. Mass incarceration involved historic increases in concentrated imprisonment of minority men (37) and reduced welfare support (38). Beckett and Western (ref. 39, p. 45) observe that welfare spending and incarceration were strongly and negatively related by 1995. In Chicago, the correlation between neighborhood economic disadvantage and incarceration rates reached  $\sim 0.8$  (18). The damaging economic effects of mass

incarceration were pronounced for African-American men, particularly those from impoverished backgrounds.

This convergence of diminished social welfare and heightened incarceration represents another stage of exclusionary racial policies (40–42). Of course, most residents do not articulate these patterns in the specific ways used by Beckett and Western and others. The result in affected neighborhoods may often be a more practical, reflexive, and generalized awareness and cognitive response. Thus, Bell (8) finds that, confronted with the loss of welfare protections and mass incarceration that removed men from their families, mothers were left to summon the police strategically in response to certain threats to their households' safety and security. However, Bell did not find that her respondents' narratives always or clearly described the motivational backdrop to calling the police.

The 2000s marked another historical assault on minority neighborhoods: foreclosure repossessions (43) and evictions (44). In the United States, an estimated 2.5 million foreclosures occurred between 2007 and 2009, mostly on owner-occupied properties and disproportionately among African-American and other minority families (43, 45, 46). Nearly 8% of African-Americans lost homes, compared with 4.5% of whites (43). Foreclosures also intensified racial segregation and isolation (46). European scholars and policy makers (47) use the concept of "social exclusion" to refer to disaffiliation and disconnection, and Western (ref. 40, p. 105) describes the disproportionate incarceration of minority men as "profound social exclusion." We argue that incarceration and foreclosure repossessions were successive sources of systemic exclusion that disproportionately removed minority men, women, and children from their families and their homes. We expect this removal increased problems in minority neighborhoods and thus led to more 911 calls for help. Research is inconclusive on the relationships between incarceration, foreclosures, and police crime reports (48–51), but we know of no analyses that examine how these variables affect resident crime reporting.

Concentrated imprisonments and foreclosures are products of deliberate ongoing policy choices. They reflect state-enabled investment and financial policies (52–54) and, in this sense, deliberately intensified concentrated disadvantage in African-American communities. Again, the processes were often arcane, defying conscious understanding. As a result, they became sources of a less consciously articulated, but nonetheless practically sought, demand for crime prevention and police protection.

To this point, we have focused on African-Americans and African-American neighborhoods, which in Chicago have a long history of differentiation, inequality, and discrimination. Other minority groups, including Hispanics/Latinos, have had more recent experience with these conditions, and many suffered incarcerations (37) and foreclosures at high levels (43, 46). However, Hispanic residents have mostly avoided the hypersegregation that many African-Americans face (36, 55). Although a number of studies find Hispanic respondents have more negative views of the police than whites, Hispanics have less negative views than African-Americans (56). This is consistent with Bobo and Hutchings' (57) argument that people from more recently arrived groups feel less alienated than members of long-term (and involuntarily incorporated) groups.

### Propositions About Race/Ethnicity and Reported Crime

Our elaboration of Vaisey's (13) dual-process theory at the community level asserts that historical and contemporary mistreatment of minorities and, in particular, segregation and isolation created a conscious and nonconscious residue that encourages legal cynicism as well as pleas for prevention and protection from crime as expressed in calls for police assistance. Vaisey (13) emphasizes that cultural schema can have such recent resonance and be so repeatedly internalized as to be

unconscious but still be elicited empirically with survey measures. We use this dual-process model with a focus on race and legal cynicism to examine five propositions about neighborhood variation in residents' reports of crime:

Proposition 1: At both nonconscious and conscious cognitive levels, community racial composition, isolation, and identity have strong, persistent, and significant effects on resident-reported crime. These patterns will be less pronounced for ethnic composition.

Proposition 2: The cultural schema of legal cynicism is a key consciously accessible motivational source of discursive insight into reporting of crime. This cultural narrative has durable direct and indirect mediating effects that reinforce and transmit the conscious and nonconscious relationships among race, ethnicity, and resident-reported crime.

Proposition 3: State-structured systemic exclusion, through contemporary mass incarceration and foreclosed home repossessions, further—but not completely—mediates the cumulative relationship among race, ethnicity, and resident-reported crime.

Proposition 4: The above-noted cultural and structural factors play persistent roles in a dual historical and contemporary process that goes beyond perceived procedural justice in influencing resident crime reporting. Thus, an individualistic reliance on procedural justice theory is an insufficient explanatory and policy response to the relationship between race and reported crime in America.

Proposition 5: Police and resident reports of crime have overlapping determinants, but the latter more closely reflect residents' concerns and thus are more sensitive to neighborhood conditions and changes in them.

## Data, Measures, and Methods

We assess our propositions with Chicago census-tract data. We obtained data on racial composition and other exogenous neighborhood structural conditions from the 1990 and 2000 censuses. The percent African-American in 1990 is highly skewed, and so we divide it into quartiles (see *SI Appendix, Table S1* for descriptive statistics); we follow the same approach for measuring percent Hispanic. We include 1990 measures of five other structural variables that may influence 911 calls and our key intervening variables: (i) percent immigrant (i.e., foreign born; ref. 58); (ii) residential stability (percent of houses owner occupied and of residents with housing tenure of five or more years; ref. 58); (iii) number of residents; (iv) number of addresses receiving mail; and (v) concentrated disadvantage (i.e., number of children under 18 y and percent of residents below the poverty line, receiving public assistance, living in a female-headed household, and unemployed; ref. 58). We supplement these with measures reflecting the change in these neighborhood conditions at the 2000 census (i.e., 2000 values minus 1990 values); we use change scores because the 1990 and 2000 measures are highly correlated (18). Given our interest in racial and ethnic isolation, we distinguish tracts that experienced quartile increases or decreases in the percent African-Americans or Hispanics (no change is the comparison category).

We measure our key theoretical and first intervening variable, legal cynicism, with information from the Project on Human Development Chicago Neighborhoods (PHDCN) Community Survey (58, 59). Conducted in 1994–1995, the PHDCN used a probability sample to select residents from 865 Chicago census tracts (an average of 10 respondents per tract, 78% response rate). Scholars use a variety of items to measure legal cynicism (15–17, 33, 60, 61). We use Kirk and Papachristos' (16) neighborhood-level measure from the PHDCN data and combine three Likert-scaled statements that assess agreement that law and law enforcement efforts fail to achieve three goals (see *SI Appendix, Table S2* for details on these and other survey items): (i) prevention (“the police are not doing a good job in preventing crime in this neighborhood”); (ii) protection (“the

police are not able to maintain order on the streets and sidewalks in the neighborhood”); and (iii) a just rule of law (“laws are made to be broken”). This scale reflects average residents' legal cynicism in the mid-1990s in each census tract.

We use a second survey, the Chicago Community Adult Health Study (CCAHS), for measures of other potential intervening variables. Administered between 2001 and 2003, the CCAHS (62) drew on the PHDCN design, replicated many of its measures, and gathered face-to-face adult interviews. However, it has a smaller sample size of 3,105 from 675 Chicago census tracts with an average of 4.6 respondents per tract. This limits our analysis to 675 tracts. We use the CCAHS to measure perceived procedural justice and two other cultural schemas known to predict police reports of crime: collective efficacy and tolerance of deviance (17). Researchers use a variety of items to measure procedural justice (27–32). We follow Kirk's (33) analysis of the CCAHS data and measure perceived procedural justice with two items in a section of the CCAHS questionnaire that begins with the statement: “The next set of questions asks about what it's like to live in your neighborhood.” These items ask respondents whether “police in your local community can be trusted” and if “the police are fair to all people regardless of their background.” The trust item reflects confidence in the police, while the sense of fairness measure indicates police legitimacy. Five years separate our survey measurements of census-tract legal cynicism and procedural justice, and the two scales are only moderately correlated ( $r = -0.384$ ); moreover, as we show below, they have different relationships with our outcomes.

We measure a third cultural frame, collective efficacy, with a 10-item scale originally used by Sampson and colleagues (58, 59). Collective efficacy focuses on community social control, cohesion, and trust. Our fourth cultural schema, tolerance of deviance, is a three-item scale adapted from Sampson and Bartusch (15). The items in this scale asked respondents how wrong they thought it was for a 13-y-old to engage in minor delinquency (i.e., smoke cigarettes or marijuana, drink alcohol). We used the CCAHS to measure one additional variable, criminal victimization. This scale combines four questions asking respondents if they or someone in their household had been the victim of neighborhood property or violent crime. The study designers of the CCAHS (and the PHDCN) imputed missing data for the scale items we use (58, 62).

We measure incarceration with data developed by Cooper and Lugalia-Hollon (63) to identify Chicago's “Million Dollar Blocks” (estimated costs of incarcerating residents). We analyze data on offenders who receive a custodial sentence (i.e., jail, boot camp, or prison). Our foreclosure measure uses data gathered by a private company, Record Information Services. We have information for all single-family 2006–2008 foreclosure repossessions. The most vulnerably financed houses, purchased with subprime mortgages, dominated the foreclosure crisis (64).

We used SAS, a software program, to obtain zip codes and geocoordinates for the incarceration and foreclosure data and ArcGIS software and 2000 Census tract shapefiles to match records to a census-tract number. We summed incarcerations and foreclosures for each census tract for each quarter of 2006–2008. We include original metric and quadratic measures because positive associations between 911 calls and incarcerations or foreclosures may have upper limits: At some point, incarceration and repossessions may leave too few people to be crime victims or to observe and report victimization.

We measure our primary dependent variable, 911 calls, with the universe of all census-tract level calls. The 911 data detail the date, the nature of the event (descriptor), and the addresses of the event and caller. They provide counts about each reported crime, per census tract and per quarter for the period 2006–2008. There were ~1.58 million 911 calls in our data for the crimes we study, but about one-quarter of these calls were made on the

same date for the same offense. These duplicates may reflect the number of people concerned about a crime, repeated calls by the same caller, or data-entry error; given this uncertainty, we dropped them from our analyses. We focus on property crime because of space limitations and report results for violent crime (assault, battery, threats, use of a weapon, robbery, sexual assault, other sexual offenses, and gunshots) in *SI Appendix, Tables S7–S9*. Our property crime scale includes all calls about a theft or a burglary. Ecological analyses of neighborhood differences in crime rates commonly find evidence of a spatial relationship in which crime rates in one neighborhood influence those around it (18). Thus, we include a spatial lag variable for 911 calls based on each census tract's longitude and latitude (65).

We supplement our 911 analysis with an analysis of police reports of a theft or a burglary (and for violent crimes in our analyses of 911 violent crime calls). These data are counts of official property crime per census tract and per quarter for the period 2006–2008. Police reports and 911 crime are correlated ( $r = 0.777$ ), but there is a substantial difference between the two (10). This difference likely arises from several factors, including police activity independent of 911 calls (e.g., stop and frisk, random vehicle stops), the failure of police to respond to some 911 calls, and police discretion in deciding which 911 events they will define as crimes (9). Police reports and 911 calls are likely reciprocally related, and so we include a measure of each in our respective analyses.

We use Stata and multilevel mixed-effects negative binomial regression to analyze our outcomes. Our models have two levels: time and census tracts. The mixed effects component allows the estimation of fixed effects for time-invariant (e.g., legal cynicism) and time-varying (e.g., foreclosures) variables and includes random intercepts to address clustering at the census-tract level. All the models include fixed effects for time (i.e., 10 quarter-year dummy variables) because of the notable seasonal variation in crime and crime reporting (both are often highest in summer). We use a negative binomial model because the 911 count data are over-dispersed. Multicollinearity among our independent variables is not an issue: Variance inflation factor scores are less than four in all but two cases (number of addresses and African-American quartiles at 4.9 and 4.6, respectively).

## Results

**A Descriptive Overview.** In an average tract, people made about 41 calls to 911 per quarter to report a property crime in 2006–2008, whereas police recorded about 31 calls (*SI Appendix, Table S1*). The 1990 census data indicate that, in the average tract, ~40% of residents were African-American, 20% were Hispanic, 36% were white, and 15% foreign-born. However, most tracts were highly segregated. Dividing tracts into quartiles for the percent African-American shows that in 1990 25% of Chicago residents lived in tracts in which less than 0.68% of residents identified as African-American (first quartile). Another 25% lived in tracts in which African-Americans made up between 0.68 and 12.52% of residents (second quartile). Tracts in the third quartile had a black population of between 12.53 and 97.55%, while the fourth was more than 97.55% African-American. Dividing tracts into quartiles for the percent Hispanic, 0.77% of residents in the first quartile were Hispanic, while in the second quartile between 0.78 and 6.58% of residents were from this ethnic group. In the third quartile, between 6.59 and 33.12% were Hispanic, while in the fourth quartile more than 31.12% chose this census designation.

Data on individual variables in our cumulative disadvantage scale indicate that in the average tract 25% of residents were poor, 12% were unemployed, 19% were on social assistance, and 19% of families were female-headed. A slight majority (52%) of residents in the average tract had lived in their homes 5 y or more, and 40% owned their homes.

The three items in the PHDCN legal cynicism scale indicate that in the mid-1990s one-third of respondents agreed or strongly agreed that the police did not do a good job preventing crime, and just over 40% agreed or strongly agreed that the police did not do a good job of maintaining order. A much smaller proportion, 15%, agreed or strongly agreed that laws are made to be broken. The average respondent in the CCAHS agreed their community had high collective efficacy and thought that children's involvement in deviant behavior was very wrong. Data on the two measures of procedural justice indicate that in the early 2000s 29% of respondents agreed or strongly agreed that police could not be trusted, and 55% agreed or strongly agreed that the police were not fair to all people. Raw data show that 59% of respondents had been the victim of a crime, with property crimes more common than violent ones (35% compared with 15%).

Data on incarceration indicate that from 2006–2008 59,992 people were sentenced to jail or prison for an average of seven people per census tract per quarter. Less than one-fifth of tracts (12.6%) had no incarcerations. This period also saw 25,005 foreclosure lawsuits against homeowners. Just over one-quarter of these foreclosures (7,699) involved repossession of single-family homes, an average of 0.95 repossessions per tract per quarter. There are two clear patterns in the foreclosure data: (i) the number of repossessions increased significantly over time (from 1,120 in 2006, to 2,705 in 2007 and 4,325 in 2008) and (ii) repossessions were concentrated in western and southern census tracts. Both repossessions and incarceration occurred disproportionately in the tracts that contained the poorest neighborhoods and the highest proportions of minority residents.

Bivariate regression results (*SI Appendix, Table S1*) are mostly consistent with our propositions: 911 calls about property crime were higher in neighborhoods with high concentrations of African-Americans and high levels of legal cynicism, incarceration, and foreclosures. They were lower in communities with strong collective efficacy and a higher tolerance of deviance. Meanwhile, in contrast to procedural justice theory, positive perceptions of the police are negatively associated with 911 calls, suggesting they result in fewer calls. The 911 calls were also less common in neighborhoods with a high concentration of Hispanic residents, a pattern that is consistent with police-reported crime (66).

**Multivariate Analysis.** We begin with the strong and well-known relationship between race and resident-reported crime (Table 1, column 1; full results are given in *SI Appendix, Table S3*). The effect coefficients for the third and fourth—the most concentrated—quartiles of African-American tracts are strong, significant, and net of significant effects for our 911 spatial lag measure and other structural variables. This is the starting point for analysis of our first proposition about the strong combined conscious and nonconscious cognitive effects of the racial composition and identity of African-American neighborhoods that we disaggregate below. In this model, the negative bivariate association between 911 calls and high Hispanic concentration and isolation (i.e., fourth quartile) is reversed and is now positive and significant (mostly because of holding constant African-American isolation and concentration and neighborhood economic disadvantage). This Hispanic effect is notably smaller than those for third and fourth quartile African-American segregation. This is as predicted in proposition one and was anticipated by the notably lower concentration and isolation observed earlier in Hispanic compared with African-American neighborhood quartiles.

The next column in Table 1 introduces legal cynicism. As predicted in our second proposition, legal cynicism has a strong positive and significant effect and including it noticeably improves model fit [see Bayesian information criterion (BIC), ref. 67]. Adding legal cynicism also reduces the third and fourth quartile African-American tract composition and

**Table 1. Multilevel mixed-effects negative binomial regression, 911 calls for property crime 2006–2008**

Variables	1	2	3	4	5	6
Second quartile African-American 1990	0.090 (0.057)	0.079 (0.057)	0.164** (0.059)	0.155** (0.058)	0.146* (0.057)	0.120* (0.049)
Third quartile African-American 1990	0.548*** (0.084)	0.496*** (0.085)	0.513*** (0.086)	0.457*** (0.085)	0.435*** (0.083)	0.388*** (0.072)
Fourth quartile African-American	0.718*** (0.130)	0.656*** (0.127)	0.728*** (0.142)	0.677*** (0.137)	0.654*** (0.135)	0.564*** (0.117)
Second quartile Hispanic 1990	-0.059 (0.084)	-0.042 (0.082)	-0.072 (0.084)	-0.054 (0.082)	-0.044 (0.081)	-0.043 (0.067)
Third quartile Hispanic 1990	0.151 (0.101)	0.157 (0.099)	0.128 (0.104)	0.126 (0.103)	0.123 (0.101)	0.114 (0.084)
Fourth quartile Hispanic 1990	0.306** (0.108)	0.275** (0.106)	0.229* (0.116)	0.207 (0.113)	0.204 (0.112)	0.178 (0.094)
Legal cynicism 1994–1995		0.165** (0.050)	0.169*** (0.049)	0.143** (0.049)	0.135** (0.048)	0.108** (0.040)
Positive African-American quartile change 1990–2000			0.164** (0.059)	0.160** (0.058)	0.154** (0.057)	0.127** (0.049)
Negative African-American quartile change 1990–2000			-0.175** (0.068)	-0.185** (0.065)	-0.180** (0.065)	-0.151** (0.055)
Positive Hispanic quartile change 1990–2000			0.058 (0.055)	0.057 (0.053)	0.055 (0.052)	0.059 (0.045)
Negative Hispanic quartile change 1990–2000			0.121* (0.061)	0.115 (0.060)	0.107 (0.059)	0.086 (0.049)
Procedural justice 2001–2003				-0.089* (0.039)	-0.085* (0.039)	-0.060 (0.034)
Collective efficacy 2001–2003				-0.157* (0.070)	-0.153* (0.069)	-0.085 (0.060)
Tolerance of deviance 2001–2003				-0.030 (0.022)	-0.027 (0.022)	-0.014 (0.018)
Victim of crime 2001–2003				0.075 (0.062)	0.074 (0.061)	0.033 (0.051)
Residential foreclosures 2006–2008					0.024*** (0.004)	0.023*** (0.003)
Residential foreclosures 2006–2008†					-0.000 (0.000)	-0.001* (0.000)
Incarceration 2006–2008					0.002* (0.001)	0.002* (0.001)
Incarceration 2006–2008†					-0.000** (0.000)	-0.000* (0.000)
Police reports of property crime 2006–2008						0.008*** (0.001)
Alpha	-3.601*** (0.045)	2.311*** (0.164)	2.390*** (0.160)	-3.602*** (0.045)	-3.628*** (0.045)	-3.885*** (0.091)
Tract variance	0.224*** (0.022)	-3.601*** (0.045)	-3.602*** (0.045)	0.190*** (0.019)	0.185*** (0.019)	0.128*** (0.016)
Constant	2.189*** (0.166)	0.219*** (0.022)	0.198*** (0.020)	2.377*** (0.157)	2.412*** (0.155)	2.437*** (0.131)
BIC	58,833.52	58,761.75	58,754.29	58,766.42	58,705.02	57,549.05
Observations/no. of groups	8,026/670					

SEs are given in parentheses; full results are available in *SI Appendix, Table S3*. Statistical significance: \*\*\* $P \geq 0.001$ ; \*\* $P \geq 0.01$ ; \* $P \geq 0.05$  (two-tailed).

†Quadratic term coefficient.

identity effects. There is no consensually established formal mediation test for multilevel negative binomial models; instead, we use the Kohler–Karlson–Holm (KHB) method (68), which its originators characterize as “experimental” for these models. The results indicate that legal cynicism is a substantial and significant mediator of the effects for African-American and Hispanics tract composition noted above. This pattern reflects the operation of legal cynicism as a dual conscious and nonconscious mediator of the relationship between race and crime reports (*SI Appendix, Table S4*). The legal cynicism measures are from 1994–1995, and the 911 data are from 2006–2008, indicating that the direct and

indirect effects of this legal schema have persisted for over a decade, as predicted in our second proposition.

We next introduce measures of change in census variables from 1990–2000. The results (Table 1, column 3) show the persistent effect of legal cynicism. As well, they indicate that an increase in African-American concentration over this decade is positively associated with 911 calls, while a decrease is associated with a drop in calls. The increase acts as a mediator of neighborhood composition in census tracts with a high proportion of African-Americans, while the decrease acts as a suppressor of this neighborhood composition effect (*SI Appendix, Table S4*).

Consistent with our dual-process theory, the maintenance or shift in a tract's degree of racial isolation accounts for the continuity or change in the effects of legal cynicism. Other significant effects include positive coefficients for a decrease in the concentration of Hispanic residents and overall population growth and a negative effect for an increase in the percentage of immigrants. Adding census change variables also improves overall model fit.

We next introduce (Table 1, column 4) procedural justice, collective efficacy, tolerance of deviance, and criminal victimization (from the 2001–2003 CCAHS survey). In contrast with the

expectations of the procedural justice theory but consistent with our fourth proposition, perceived procedural justice has a significant negative effect on 911 calls. Collective efficacy also has a significant negative association with 911 calls, and both variables moderate the effects for legal cynicism for third and fourth quartile African-American composition and fourth quartile Hispanic composition (the latter is no longer significant); however, including the CCAHS variables does not substantially improve model fit.

Our fifth equation adds incarceration and foreclosures; both have notable, significant associations with 911 calls and improve

**Table 2. Multilevel mixed-effects negative binomial regression, police reports of property crime 2006–2008**

Variables	1	2	3	4	5	6
Second quartile African-American 1990	0.118* (0.059)	0.110 (0.058)	0.171** (0.060)	0.160** (0.058)	0.154** (0.057)	0.128* (0.050)
Third quartile African-American 1990	0.432*** (0.079)	0.391*** (0.082)	0.412*** (0.081)	0.349*** (0.081)	0.333*** (0.080)	0.232*** (0.067)
Fourth quartile African-American 1990	0.516*** (0.116)	0.466*** (0.118)	0.560*** (0.126)	0.504*** (0.122)	0.484*** (0.121)	0.313** (0.099)
Second quartile Hispanic 1990	-0.067 (0.085)	-0.055 (0.084)	-0.039 (0.087)	-0.019 (0.086)	-0.014 (0.085)	-0.001 (0.066)
Third quartile Hispanic 1990	0.163 (0.102)	0.167 (0.100)	0.180 (0.105)	0.175 (0.104)	0.172 (0.103)	0.168* (0.083)
Fourth quartile Hispanic 1990	0.255* (0.112)	0.233* (0.111)	0.232 (0.120)	0.200 (0.119)	0.197 (0.118)	0.165 (0.097)
Legal cynicism 1994–1995		0.116* (0.057)	0.133* (0.054)	0.106* (0.054)	0.100 (0.054)	0.071 (0.046)
Positive African-American quartile change 1990–2000			0.173** (0.057)	0.168** (0.056)	0.163** (0.056)	0.122** (0.047)
Negative African-American quartile change 1990–2000			-0.119 (0.066)	-0.132* (0.065)	-0.128* (0.065)	-0.087 (0.055)
Positive Hispanic quartile change 1990–2000			0.069 (0.053)	0.067 (0.052)	0.066 (0.052)	0.071 (0.045)
Negative Hispanic quartile change 1990–2000			0.064 (0.064)	0.060 (0.063)	0.055 (0.062)	0.012 (0.051)
Procedural justice 2001–2003				-0.086* (0.036)	-0.083* (0.036)	-0.056 (0.030)
Collective efficacy 2001–2003				-0.171* (0.067)	-0.167* (0.066)	-0.095 (0.056)
Tolerance of deviance 2001–2003				-0.039 (0.022)	-0.037 (0.022)	-0.026 (0.018)
Victim of crime 2001–2003				0.106 (0.066)	0.105 (0.065)	0.068 (0.054)
Residential foreclosures 2006–2008					0.011* (0.005)	0.006 (0.004)
Residential foreclosures 2006–2008 <sup>†</sup>					0.000 (0.000)	0.000 (0.000)
Incarceration 2006–2008					0.002 (0.002)	0.002 (0.002)
Incarceration 2006–2008 <sup>†</sup>					-0.000 (0.000)	-0.000* (0.000)
911 calls property crime 2006–2008						0.007*** (0.001)
Alpha	1.976*** (0.204)	2.062*** (0.201)	2.049*** (0.208)	1.995*** (0.206)	2.004*** (0.205)	2.017*** (0.170)
Tract variance	-2.970*** (0.064)	-2.970*** (0.064)	-2.972*** (0.064)	-2.971*** (0.064)	-2.973*** (0.064)	-3.093*** (0.077)
Constant	0.225*** (0.017)	0.223*** (0.017)	0.204*** (0.015)	0.195*** (0.015)	0.192*** (0.014)	0.129*** (0.012)
BIC	57,838.66	57,771.85	57,780.66	57,789.78	57,806.49	56,985.79
Observations/no. of groups	8,026/670					

SEs are given in parentheses; full results are available in *SI Appendix, Table S4*. Statistical significance: \*\*\* $P \geq 0.001$ ; \*\* $P \geq 0.01$ ; \* $P \geq 0.05$  (two-tailed).

<sup>†</sup>Quadratic term coefficient.

model fit. As predicted in proposition three, the effects for legal cynicism and for third and fourth quartile African-American racial composition are notably reduced, suggesting sizable mediating effects; these are largest for incarceration, but residential foreclosures also play a role (*SI Appendix, Table S4*).

We add police reports of crime in our final equation. As expected, it has a positive association with 911 calls and further mediates associations between 911 calls and legal cynicism and African-American tract level racial composition and identity; nonetheless, these variables remain significant predictors of 911 calls (we see the same patterns as described above if we enter police reports of crime in our first, rather than last, equation). These findings support the prediction of proposition three that the cumulative collective effects of African-American community racial composition and identity are historically persistent in explaining crime reporting, notwithstanding the more contemporary, partially mediating effects of legal cynicism, incarceration, and foreclosures.

The results of our analysis of police reports of property crime are also consistent with our fifth proposition (Table 2; full results are given in *SI Appendix, Table S5*). The effects of community racial composition and legal cynicism on police reports are, on average, about three-quarters the size of the effects on 911 calls, the effect of residential foreclosures is less than half the size, and the effect of incarceration is not significant. These differences underscore the importance of 911 calls for understanding differences between resident and police concerns about neighborhood crime.

We use predicted counts to give an indication of the magnitude of race, legal cynicism, incarceration, and foreclosure effects on 911 calls. Given space constraints, we present results disaggregated by African-American concentration and isolation (see *SI Appendix, Table S6* for the results for Hispanic quartiles). Fig. 1 contains estimates for property crime across neighborhoods based on quartile levels of African-American residents and on varying levels of our other key variables. Using the final model from Table 1, we set legal cynicism, incarceration, and foreclosures at the lower bound of their fifth, 10th, 25th, 50th, 75th, and 90th percentiles, with the remaining variables set to sample means.

Fig. 1 highlights the dramatic consequences for resident reporting of property crime in the most concentrated African-American communities (third and fourth quartiles), which are high (90th

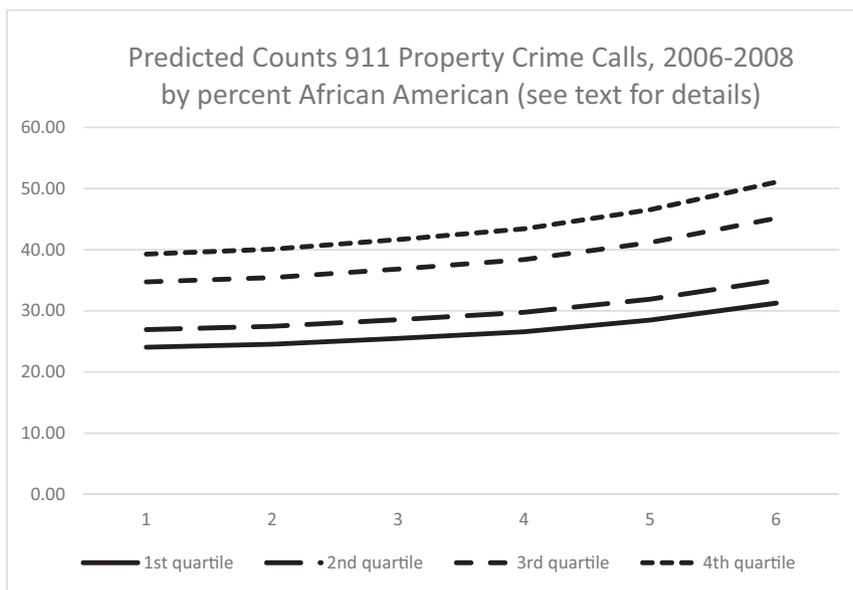
percentiles) in legal cynicism, incarceration, and foreclosure repossessions. Tracts with these attributes could expect about 45 and 51 calls per census tract per quarter for property crimes. Tracts that had these conditions include those in Roseland (third quartile) and West Englewood (fourth quartile). In contrast, communities with few African-Americans (first and second quartile) and low (fifth percentile) levels of legal cynicism, foreclosures, and incarcerations could expect only about 24 or 25 calls for property violations. Forest Glen (first quartile) and the Loop (second quartile) are examples of neighborhoods with tracts that had these conditions.

The results for 911 calls about violent crime (*SI Appendix, Tables S8 and S9*) show patterns similar to those described above, but the positive effects for neighborhood racial and ethnic composition and legal cynicism are generally larger, as is the negative effect of procedural justice. The effect of residential foreclosures is notably smaller but is still significant, whereas those for collective efficacy and incarceration are not significant. A comparison of police reports of violent crime with 911 calls shows patterns similar to those for property crime: Effects are generally larger for racial composition, legal cynicism, and procedural justice for violent crime, and they are smaller for collective efficacy, foreclosures, and incarceration.

**Conclusions**

In 1972, Congressman Ralph Metcalfe reported on “The Misuse of Police Authority in Chicago” (69). He found “a crisis in police community relations . . . at all levels . . .” In 2016, Mayor Rahm Emanuel received a “Police Accountability Task Force” report (70) indicating police–community relations were worse, reflected in an “historic outcry” that “had reached a breaking point with the entire local law enforcement infrastructure.”

Procedural justice theory (18) is a currently popular approach to these problems of community–police relations. Carr et al. (7) use this theory to address a paradox in their respondents’ narratives: The young men they interviewed said that police abuse and the lack of due process are unfair, but their sense of injustice is transitory and replaced by “widespread support for pro-criminal justice solutions to crime” (ref. 7, p. 469). The procedural justice theory Carr and coauthors use maintains that better training of police in procedural practices will increase



**Fig. 1.** Predicted counts of 911 calls reporting property crime 2006–2008 by percent African-American population. Models 1–6: Legal cynicism, incarceration, and repossessions, at 5th, 10th, 25th, 50th, 75th, and 90th percentile (all other variables are set to their means; see *SI Appendix, Table S3*; all effects are significant,  $P < 0.001$ ). See text for details.

trust and confidence and promote cooperation in reporting crime to police, regardless of race. However, we did not observe underreporting of victimization in African-American neighborhoods; instead, crime reporting by residents is higher in minority neighborhoods where there is increased legal cynicism about police crime prevention and protection.

We use the dual-process theory to explain this paradox. The dual-process theory maintains that survey items capturing collective motivational elements in cultural frames such as legal cynicism can account for the paradoxical content of neighborhood narratives about police–community contacts. These collective motivational elements include pleas for crime prevention and protection. The persistent influence of legal cynicism in minority communities is not transitory, as Carr and colleagues suggest, but rather is historically cumulative at the conscious and nonconscious levels that are central to dual-process theory.

We find persistent and pervasive expressions of legal cynicism about police effectiveness in Chicago that, paradoxically and enduringly, are also associated with heightened calls for police assistance. Legal cynicism is important not only for understanding 911 calls about crime but also in mediating and transmitting tract-level influences of community racial composition and identity. Our point is not that all victimization resulting in 911 calls should be criminally charged; charges can heighten cynicism about police ineffectiveness in crime prevention and protection. Instead, our findings suggest problems of police–community relations in minority neighborhoods where concerns about ineffective prevention and protection dominate. As Bell (33) and others (6) emphasize, persistent and pervasive police mistreatment and neglect, along with legal cynicism and neighborhood structural disadvantages, all contribute to “legal estrangement.”

The need for community-level research about procedural justice is pressing because policy makers have eagerly embraced it. It is the foundation of a frequently cited police-training program in Chicago (71) and recommendations by a Presidential Commission (72) and is central to a National Research Council Committee on Proactive Policing (73). However, by embracing the procedural justice framework and neglecting macrolevel substantive sources of perceived procedural injustice, policy makers may have mistakenly ignored important sources of the police–community relations they seek to reform.

We find that problems of policing high-crime-rate neighborhoods are more complex, entrenched, and cumulative than procedural justice theory suggests. This paper accounts for the ongoing troubled state of police–community relations by more fully analyzing the antecedents of resident-reported crime. Emergency 911 calls play a formative role in police–community relations and correlate more strongly than other known predictors with crime reporting by police. These calls for police assistance are far more common from minority neighborhoods whose composition and identity are cumulatively shaped by a dual conscious and nonconscious cognitive processing of lived experiences that produce legal cynicism.

Experience-based processes that foster legal cynicism involve a troubled history of systemic exclusion. The cumulative nature of these processes is vividly reflected in the persistent influence of the

1990 census tract measure of African-American neighborhood composition and identity as a predictor of 911 calls for police assistance and police-reported crime in 2006–2008 as well as by the mediation of the effect of racial composition and identity by legal cynicism and recently heightened levels of incarceration and home foreclosures.

Our findings indicate that the dual impact of conscious and nonconscious cognitive processes was especially strong in the 1990s and in relation to residents’ cynical feelings about crime prevention and protection in their communities. Legal cynicism’s direct effect on 911 calls by people concerned about preventing and protecting themselves and their neighbors from crime is striking in strength and statistical significance more than a decade after its 1994–1995 measurement. The 911 calls express a continuing desire for crime prevention and protection notwithstanding past disappointments.

Politicians and policy makers have historically responded to calls for assistance from African-American neighborhoods with punitive measures, from stop-and-frisk policing to mass incarceration. However, the underlying plea of these calls for crime prevention and protection persists and is unlikely to improve without increased attention to prevention and protection in police–community relations. Hinton and coauthors (74) argue, “when blacks ask for *better* policing, legislators tend to hear *more* instead” suggesting that minority communities on the one hand and politicians and the police on the other see these issues from different vantage points. More research is needed on how the distance between these understandings can be reduced.

Our paper began with a paradox often reflected in narratives about the police. We have presented evidence for a survey-based dual-process theory of legal cynicism that addresses the paradox of such narratives. The theory of legal cynicism is anchored in indicators of a focal concept that reflects collectively shared motivational sentiments in minority communities: that the police are unable or unwilling to provide preventative and protective assistance in a system in which “laws are made to be broken.” Decades of mass incarceration and a housing crisis leading to widespread home foreclosures and repossessions continue to mediate the effects of legal cynicism in Chicago’s disadvantaged minority neighborhoods, especially for common property crimes, and may further entrench such crime. However, the desperate hope persists that calls for police assistance can deliver safety and security.

Survey and official data gathered over several decades in Chicago show that a cultural schema of legal cynicism—operative at both more and less conscious levels—is a crucial component in a cognitive landscape that urgently demands crime prevention and protection. These needs and demands are wide-ranging, long-standing, and deeply entrenched.

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