Where concerned citizens perceive police as more responsive to troublesome teen groups: theoretical implications for political economy, incivilities and policing

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RESEARCH ARTICLE

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The current investigation extends previous work on citizens' perceptions of police performance. It examines origins of between-community differences in concerned citizens' judgements that police are responding sufficiently to a local social problem. The problem is local unsupervised teen groups, a key indicator for both the revised systemic social disorganisation perspective and the incivilities thesis. Four theoretical perspectives predict ecological determinants of these shared judgements. *Less* perceived police responsiveness is anticipated in: *lower* socio-economic status (SES) police districts by both a political economy and a stratified incivilities perspective; *more predominantly minority* police districts by a racialised justice perspective; and in *higher* crime police districts by a proposed extension of Klinger's ecology of policing model. The current work improves upon earlier conflicting work in this area in several ways; most importantly it distinguishes between perceived need for police and perceived police responsiveness. Survey, census and crime data from Philadelphia were used. Results showed residents concerned about this problem and living in lower SES police districts or higher violent crime police districts judged police as less responsive. Results supported political economy and stratified incivilities models and to a lesser extent the proposed extension of Klinger's ecology of policing perspective. Implications for broader understandings of community variation in citizens' reactions to police, and for national programmes to improve police responsiveness, were noted.

Keywords: policing; ecology; incivilities; stratification

Urban police work always has been (Lane 1967) and probably always will be a complicated business.[1] Officers are expected not only to respond to a wide array of crimes, but also to non-criminal critical incidents like mentally unstable street people, or to ongoing conditions residents or local business owners may find bothersome like aggressive panhandlers, rowdy teen groups or rental property disrepair (Wilson and Kelling 1982, Mazerolle *et al.* 2000, Mazerolle and Ransley 2005, 2006). These are sometimes called social or physical incivilities (Taylor 2001). These local social or physical problems, which may or may not be low-level crimes, can under some circumstances have some impact on neighbourhood structure, the local crime rate and residents' reactions to crime (Wilson and Kelling 1982, Skogan 1990, Taylor 2001). Although the organisational context of policing has become increasingly

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complex with shared governance for security (Wood and Shearing 2007), or hybrid (Innes 2003) or third party policing (Mazerolle and Ransley 2006) arrangements, at least in major cities in places like the USA, the UK and Australia, police are typically the first agency contacted by concerned citizens to address these problems. The current work investigates one facet of a local order-related problem: unsupervised teen groups.

Shared perceptions that local unsupervised teen groups are a neighbourhood problem are theoretically relevant to two models about community crime differences: the revised systemic social disorganisation model (Sampson and Grove 1989) and the incivilities thesis (Taylor 2001). For the former model, unsupervised trouble-making teen groups represent impaired local supervisory capacities. For the latter model, these groups are a prototypical social incivility. For the current purposes community variation in perceptions is assumed to arise from perceptions shared by residents in the same community (here police district) about local conditions and agency response.

The facet of unsupervised teen groups investigated here is the responsiveness of the police to this matter as perceived by citizens. More specifically, the ecological (i.e. police district-level) factors affecting citizens' judgements are of interest. If we concentrate solely on citizens recognising unsupervised teen groups as a local problem, whom we call concerned citizens,[2] the question becomes: among this group, are there between-community differences, i.e. between-district differences, in judged police responsiveness? Further, if so, in what types of locales do concerned residents think police are being sufficiently as compared to insufficiently responsive?

The current problem investigated is important because citizens' support for police is a small but nonetheless crucial part of the boundaries around highly discretionary police work. Views about how the police are doing their job link to support for police funding (Skogan and Frydl 2004, p. 291); the perceived legitimacy of police and other criminal justice agencies or public institutions (LaFree 1998); and willingness to obey the law (Tyler 1990, 2004, Tyler and Huo 2002). Ecological, between-community variation in general views about police (e.g. Sampson and Bartusch 1998) and in commitment to justice functioning (e.g. jury turnout; Taylor *et al.* 2007) have been previously established. Thinking the police are taking local problems seriously is part of those broader views about justice agencies.

The problem is also important because it links to extensive work in the UK nationally with reassurance policing (Innes 2004, 2005, Millie and Herrington 2005, Fielding and Innes 2006, Herrington and Millie 2006, Williamson *et al.* 2006), and US city-based community or beat-based policing programs like CAPS in Chicago (Skogan and Hartnett 1997, Skogan *et al.* 1999). Both types of programs share the goal of increasing police responsiveness to the community and police visibility in the community. Learning about how ecological context shapes citizens' perceived responsiveness may provide important information about potentially limiting setting conditions surrounding such programs.

If the goal is to learn about the community-level determinants of concerned citizens' judgements about whether police are handling a local problem, what theoretical lens should we use? Four different theoretical perspectives bear on this question. Each makes predictions about which dimensions of community are relevant and why. Those frameworks are introduced further below. First, however, some general background on the individual as well as community determinants of perceived and observed police responsiveness is provided.

Citizens' perceptions of police

Considerable research has focused on the individual and contextual determinants of citizens' views about police effectiveness, fairness, shootings and the legitimacy or acceptability of specific police practices and procedures (Skogan and Frydl 2004). That research shows who you are, where you are and how you rate your recent experiences with the police all prove important. (See Brown and Benedict 2002, for a comprehensive review.) Elements of perceptions investigated have included overall liking for (Peek *et al*. 1978) or trust of (Stoutland 2001) or confidence in (Cao *et al*. 1996, Ren *et al*. 2005) or satisfaction with the police (Sampson and Bartusch 1998, Reisig and Parks 2000, Huebner *et al*. 2004, Garcia and Cao 2005). Researchers have generated a variety of conceptual models to predict these views about police. These models can highlight recent interactions with police (Huang and Vaughn 1996, Bradford *et al*. 2009), community quality of life (Mazerolle and Ransley 2006), community demographic structure (Reisig and Parks 2000), or social dominance dynamics across different race or class based groups (Howell *et al*. 2004, p. 49).

Starting with who you are, persons of colour, especially African-Americans, view the police more negatively than do Whites (Brown and Benedict 2002). Race affects residents' perceptions of the degree to which policing practices are perceived as racially biased (Weitzer and Tuch 2004a, 2005), the degree of police racial profiling practiced (Tyler and Wakslak 2004), views about the need for police reform (Weitzer and Tuch 2004b), and how differential policing by race is explained (Weitzer 2000). Size of race effects may be conditional on respondent class (Hagan and Albonetti 1982), city context (Reisig and Parks 2000), region of the country (Halim and Stiles 2001) or fundamental elements of neighbourhood demographic structure such as racial composition (Apple and O'Brien 1983) or disadvantage (Sampson and Bartusch 1998). It is not clear if race-linked perceptions of police can be explained away by neighbourhood racial context or not (Sampson and Bartusch 1998, Reisig and Parks 2000).

Turning to socioeconomic status (SES) and controlling for race, class links to views not only about the broader criminal justice system, but also to views about police fairness (Hagan and Albonetti 1982). Class-linked police views, however, appear to be moderated by race (Brown and Benedict 2002, p. 550).

Turning from individual to community factors, models outlined further below expect three elements of community structure to shape views about police: SES and the local violent crime rate and racial composition. Although they did not ask directly about perceived responsiveness, two recent studies examining impacts of community structure did ask about satisfaction with police. They generated conflicting findings.

Sampson and Bartusch (1998), controlling for compositional effects, found residents were less satisfied with the police if they lived in higher violent crime rate neighbourhoods or in neighbourhoods with more concentrated disadvantage.[3] In contrast, Reisig and Parks (2000), grouping residents in two cities into much smaller police beats found no crime impacts but did replicate the impact of concentrated disadvantage. Therefore, whether crime and concentrated disadvantage *both* independently shape citizens' satisfaction with police is not clear from these two studies.

Ecological variations in responsive police behaviour

A range of police behaviours can reflect being more or less responsive to citizens' concerns. Two clear examples would include police taking a report as requested by a citizen, and complying with a citizen's request. Using observational data from the 1970s, Smith (1986) found that police were less likely to take a report from a citizen if the encounter happened in a higher crime neighbourhood. In a more recent observational study looking at police compliance with citizen requests in two different police departments, however, Mastrofski and colleagues (2000) were unable to examine ecological variation in the outcome. These authors called for future work on just this question of community differences, i.e. ecological variation, in police compliance with citizens' requests. 'We conjecture that a number of standards derived from our model of police responsiveness may vary ecologically within a large city' (Mastrofski *et al.* 2000, p. 337).

A range of other police behaviour patterns also may shape how citizens view police, including perceived police responsiveness. These potentially relevant patterns might include acting disrespectfully toward citizens (Mastrofski *et al.* 2002), stopping citizens unnecessarily (Fagan and Davies 2000, Engel *et al.* 2002), and using more force (perhaps than 'necessary') during police–citizen encounters (Terrill and Mastrofski 2002, Terrill and Reisig 2003, Skogan and Frydl 2004, McCluskey *et al.* 2005, Lawton 2007). Each of these patterns has its own research stream and accompanying conceptual and methodological complexities. For some of these patterns there are disagreements about the relevance of community context. (On use of force, for example, compare Terrill and Reisig 2003 versus Lawton 2007 versus Lersch *et al.* 2008.) The extensive work in these areas is not reviewed in detail given space limitations, and because the connection between these patterns of policing, and perceived police responsiveness to non-crime concerns, are not known.

Relevant conceptual frames

This section outlines four relevant conceptual frameworks for predicting the direction and relevance of ecological, community-level structural features – SES, racial composition and crime – on police responsiveness and corresponding citizens' perceptions.[4] Klinger's (1997, 2003) model argues that district-level differences in police responsiveness are shaped by local crime workload. A higher crime workload makes for less police response to low seriousness incidents. District-based norms about the organisation and local citizens further shape police response patterns. A political economy perspective, previously applied to crime control efforts of police, would expect less responsive police in lower SES locales (Liska *et al.* 1985). A stratified perspective on incivilities argues similarly (Taylor 2001). Finally, a racialised perspective expects less responsive police in more predominantly minority locales (Simon and Burns 1997, Massey 2007). Space limitations permit only a brief sketch of each relevant perspective as it links to extant and perceived police responsiveness.

Workload and norms

There are more crimes, and more intense non-crime problems, in some parts of a city compared to others. Given such ecological variation across districts in the demand

for police, Klinger (1997) has suggested that police are differentially responsive at the district or precinct level to low-seriousness crime and deviance. In districts with higher workloads because of more serious crime and deviance, he suggested police will be less responsive to minor crimes or deviance. District-based normative views about local citizens also contribute to and justify differential responsiveness. If this model is extended to corresponding citizens' perceptions of police effort, one expects concerned citizens will perceive police as *less* responsive to troublesome teen groups in *higher* crime locales.

Political economy

Urban political economy directs attention to community variations in SES. Logan and Molotch (1987), borrowing from Lefebvre (1974), argued that services delivered to a locale within an urban jurisdiction vary as a function of the exchange value of the locale: the monetary returns generated by that locale both for public interests, in the form of tax revenue, and for private interests, in the form of rents, house values and land values. Contrasting with exchange value is use value, the benefits of the locale for its residents; its internal social, emotional and functional value for them. Capitalism requires the primacy of exchange value over use value (Gottdiener 1994, p. 163). If differential urban service delivery reflects variations in exchange value, and the latter is reflected in the SES of the locale, then concerned citizens in *lower* SES locales will perceive the police as being *less* responsive to issues like troublesome teen groups.

Stratified incivilities

Recall that unsupervised teen groups also have been viewed as a prototypical social incivility. Recent work on the origins of incivilities and on changes in incivilities suggests strong SES links. For example, looking at perceptions of several social incivilities and controlling for general incivility perceptions from a decade earlier, several dozen Baltimore neighbourhoods perceived 'social incivilities were most likely to intensify in neighbourhoods with lower initial socioeconomic status' (Taylor 2001, p. 168). Earlier SES also was the most consistent predictor of later changes in assessed physical incivilities (Taylor 2001, p. 170). Incivilities may have intensified for a host of reasons having to do with changes both inside and outside the neighbourhoods in question. But one possibility is that in initially lower SES neighbourhoods police found it more difficult to work co-productively and collaboratively with citizens given the complexities of organisational dynamics in these locales (Ostrom *et al*. 1979, Taylor 2001, pp. 303–365). This would lead over time to less police responsiveness to low-seriousness issues, and consequently intensifying incivilities. So here, too, this perspective expects *lower* SES would link with concerned citizens thinking police were *less* responsive to troublesome teen groups.

Racial composition dynamics

The USA has witnessed a 'racialization of criminal justice' over the past several decades (Massey 2007, p. 95). The contours (Tonry 1995), causes (Scammon and

Wattenberg 1970, Garland 2002, Mason 2004) and consequences (Western and Pettit 2005, Manza and Uggen 2006, Western 2006) are complex. Given this evolution, it seems plausible to expect community racial composition may shape how police act when the concern in question is of low seriousness, thereby permitting considerable discretion. Concerned citizens in communities with a *higher* fraction of African-Americans should, according to this view, see police as *less* responsive to troublesome teen groups.

An open question and research limitations

The empirical literature on citizens' perceptions of police responsiveness has generated conflicting results on what community features might shape these perceptions. Previous research leaves open the question of whether components of community fabric like community SES, community racial composition and community crime rates shape residents' perceptions of police responsiveness. Previous work has not only generated disparate findings, it also has demonstrated several important shortcomings. Each of the following five limitations of previous research will be addressed in the current investigation.

1. Studies have not distinguished between recognising there is a local problem, and gauging how well police are doing addressing that problem. Police being seen as responsive or nonresponsive about neighbourhood issue X is only important to those residents who think X is a neighbourhood problem. Thus, in past work perceived police responsiveness or satisfaction with police could not be separated from perceived need for police.

2. Potential spatial adjacency impacts often have been overlooked, including in two key studies of community influences on police satisfaction (Sampson and Bartusch 1998, Reisig and Parks 2000). Numerous police behaviours including volume of forceful incidents (Lersch *et al.* 2008) cluster spatially. If the police behaviours relevant to responsiveness cluster spatially, and if corresponding perceptions of police by citizens cluster similarly, a spatially lagged outcome term may be needed.

3. The research has not focused tightly on local problems that are less grave than felonies or serious misdemeanours. There are strong theoretical reasons to expect that ecological variation in police responsiveness will be most evident if the focus is on these low-to-moderate severity concerns, such as troublesome teen groups, which may or may not be crime linked (Klinger 1997). These issues allow police more latitude in whether or how to respond (Fisher and Mawby 1982). If we further assume local citizens are aware of these varieties of police behaviour, that awareness too would have some degree of ecological patterning.

4. The clearest theoretical statement we have on the ecological, community-level patterning of variations in police behaviour argues that police districts or precincts are the most appropriate unit of analysis (Klinger 1997). Police work is organised at this level within departments, and norms develop at this level. Research, however, has not used these as the ecological unit of analysis.

5. A concentrated disadvantage index used in several key studies conflates race and SES, and therefore does not permit estimating separate impacts of these

two community features (e.g. Sampson and Bartusch 1998, Reisig and Parks 2000). These are two independent components of community demographic fabric (Golledge and Stimson 1997, pp. 137–140). For practical and theoretical reasons, separate estimates are desirable (Massey 1998, Small and Newman 2001).

Focus

Predictions about these ecological impacts of community structure and crime emerge from four different theoretical perspectives. Those impacts are investigated here. Following theoretical suggestions (Klinger 1997), the focus is on the appropriate organisational and ecological unit, the police district, and on an issue around which police have considerable discretion in responding, troublesome teen groups.

Methods

Setting and analytic approach

Philadelphia was the fifth largest city in the USA in 2003 with a population of 1.48 million in 23 police districts.[5] In 2003, Philadelphia had the highest reported violent crime rate among cities with over a million population (1378 per 100,000 population), and placed 13th highest in violent crime rate among cities with over 250,000 population. Its murder rate that year, 23.26, was the highest rate for cities with populations over a million and placed it eighth among cities with populations over 250,000.[6] Although the racial and ethnic composition of Philadelphia always has been (Weigley 1982) and continues to be extremely complex, currently the largest non-White racial or ethnic group is African-Americans. Census estimates from 2005–2007 indicate the population is 44.5% African-American.[7]

Data

Survey data came from the 2003 Philadelphia Area Survey/Pennsylvania Life Survey (PAS/PLS), a large, representative survey measuring residents' perceptions of numerous features of local life. The PAS/PLS was conducted by the Institute for Survey Research at Temple University between September and December of 2003 and used probability sampling procedures both for household selection and for within-household respondent selection. Eligible respondents were at least 18 years old and self-identified as a head of the household at the start of the interview.

Random-digit dialing (RDD) was used to sample households, and the latest birthday method was used as needed to sample among multiple eligible respondents within household. Trained interviewers administered the survey over the phone using computer assisted telephone interviewing (CATI). The protocol included questions on background, local social capital, a wide range of views about their neighbourhood, local services and government and broader social issues including but not limited to confidence in the criminal justice system, including views on police attitude, demeanour and effectiveness. Numerous contact attempts were made, and an automated call schedule was programmed to coordinate call times having the greatest likelihood of response (Institute for Survey Research 2003).

Interviews took about 35 minutes, and respondents who gave their names and mailing addresses after completing the interview were paid $10 through a postal money order. The respondents' addresses were then geocoded for future analyses.

The entire PAS/PLS sample frame included nine counties in the Philadelphia metropolitan area in both Pennsylvania and neighbouring New Jersey, and an oversample for remaining counties in Pennsylvania. For the entire frame, approximately 77% of the households contacted whose eligibility was known resulted in completed interviews.[8] The current work used surveys from the subsample of respondents who resided in the County of Philadelphia ($n = 341$) and provided information on the outcome variable ($n = 335$). (The City and County of Philadelphia are coterminous.) Philadelphia cases were separately weighted to match the 2000 Census for Philadelphia using one randomly sampled adult from each household in the the US Census Public Use Microdata Sample (PUMS) Philadelphia sample as the target. Matching was done on race, age and education.[9]

Dependent variable

As part of a series of questions asking about perceived neighbourhood incivilities, respondents were asked how much of a problem 'groups of unsupervised teenagers' were in their neighbourhood (1 = *serious problem*, 2 = *somewhat of a problem*, 3 = *minor problem* and 4 = *not a problem at all*). Those who thought this was a problem of some degree we refer to as concerned citizens (see footnote 2). With concerned citizens (answers 1 through 3) a follow-up question asked: 'Are the police doing enough about the problem?' (0 = *no*, 1 = *yes*).

Three groups were created based upon the *combined responses* to these two survey items:

Group 1 = not a problem (citizens not concerned) (unweighted $n = 121$; 36%).

Group 2 = some level of problem, with sufficient police response (concerned citizens, police *are* doing enough) (unweighted $n = 91$; 27%).

Group 3 = some level of problem, with insufficient police response (concerned citizens, police are *not* doing enough) (unweighted $n = 123$; 37%).

It is membership in each of these three groups that the current analysis seeks to predict. These three groups, based on patterns of responses to two questions, are qualitatively different from one another. The conceptual question then becomes: what factors influence respondents' *risk* of belonging to one group or another? If the predictor is a district-level variable, and significant, then it is affecting the relative likelihood that the respondents in one district as compared to respondents in another district will belong to one of the above three groups rather than another. Each outcome grouping is compared to a reference group called the base category. Risks are *relative* to the selected base category. These impacts are expressed as relative risk ratios (RRRs).[10]

For example if a continuous district-level predictor, X, generates a significant RRR of 1.5 and the contrast is between Group 3 (concerned, see police as not responsive) and Group 2 (concerned, see police as responsive), with Group 3 set as

the base category, the interpretation is as follows. For each standard deviation increase on X, the relative risk that residents will fall into Group 2 on the outcome, as compared to falling into Group 3 on the outcome, will be higher by a factor of 0.5, i.e. 50% higher. The relative risk of being in one group (Group 2) versus another (Group 3) is being compared for groups of respondents with different scores on X (e.g. in a community at the mean on X versus in a community a standard deviation above the mean on X). A *ratio* of relative risks is produced.

With three groups there are two possible pairwise comparisons once the base category is set: Group 3 (concerned, police not responsive) versus Group 2 (concerned, police responsive); and Group 3 (concerned, police not responsive) versus Group 1 (not concerned).

The first contrast between two groups of concerned citizens is of strongest theoretical interest. Holding concern about the social incivility constant, it focuses exclusively on variations in perceived police responsiveness.

The second contrast is analysed for two reasons. The contrast should reveal the greatest impact of community structure and crime factors because it aligns simultaneously with the stratified incivilities, political economy and policing work-load models. Further, without this analysis of the second contrast, all cases would not be analysed and thus the analysis would be incomplete. These two contrasts place respondents into three mutually exclusive and exhaustive groups.

Multinomial logit – in hierarchical or non-hierarchical form – is preferable because it '*simultaneously* estimat[es] binary logits for all comparisons among the alternatives' (Long and Freese 2006, p. 224). It thereby imposes 'constraints among coefficients that are implicit in the definition of the model' (Long and Freese 2006, p. 227). Two independent logit models would not be appropriate. 'The problem with fitting the MNLM [multinomial logit model] by estimating a series of binary logit models is that each binary logit is based on a different sample' (Long and Freese 2006, p. 225). And, as pointed out above, analyses of both contrasts are required for a complete analysis of the entire sample.

Concerned-and-not-satisfied citizens, those worried about unsupervised teen groups but who did *not* think the police sufficiently responsive (Group 3), were set as the base category.[11] Of primary theoretical interest is the multinomial contrast between the concerned-and-satisfied (Group 2) citizens who think the police are being sufficiently responsive and the concerned-and-not-satisfied (Group 3) ones who think the police are not doing enough. Taken together, the theoretical perspectives described above suggest that residents in the former group, as compared to residents in the latter group, are more likely to reside in lower crime, higher SES and less predominantly African-American communities. This contrast captured differential perceptions of police responsiveness *solely* among concerned residents who thought the problem in question was troubling their neighbourhood.

The second multinomial contrast is between citizens who are not concerned about unsupervised teen groups (Group 1) and the concerned-and-not-satisfied citizens (Group 3). Group 3 remains the base category. Congruent predictions for this contrast emerge from the incivilities, political economy and revised systemic models. Each of these models expects citizens in higher SES communities to be more likely to belong to Group 1, those not concerned about unsupervised teen groups, and less likely to belong to Group 3, residents concerned about unsupervised teen groups and not satisfied with police responses.

Independent variables

Individual level

To better gauge the contributions of community factors, variations in individual-level demographic characteristics of respondents should be controlled (Sampson *et al*. 2002). Basic compositional variables were entered at the individual level. These variables were included in the models as statistical controls: age in years, female (0 = *male*, 1 = *female*,), White (0 = *non-White*, 1 = *White*), married (0 = *not married*, 1 = *married*), degree of education (1 = *none*, 2 = *GED*, 3 = *High School diploma*, 4 = *technical school certificate*, 5 = *associate's degree*, 6 = *bachelor's degree*, 7 = *master's degree*, 8 = *professional degree or doctorate*) and having children (0 = *no*, 1 = *yes*).

Community level

Of the four theoretical models described above, Klinger's (1997) most clearly addresses community-level, ecological variation in police behaviour. His model strongly argues for organisation- and locale-based dynamics emerging at the district-level. Therefore, police districts were used as the second level of analysis in these analyses. Crime data (see below) were geocoded into district boundaries, and census data were allocated into police districts based on the fraction of each census block group's total population falling into a particular district. Census block group totals were allocated based on census block populations. All census data were from 2000.

Decades of work on community demographics suggest three fundamental dimensions: status, racial/ethnic composition and stability (Golledge and Stimson 1997, pp. 137–140). A stability index took the average of two 2000 Census indicators: percentage of households living at the same address five years previously, and percentage of owner-occupied households in 2000 (Cronbach's $\alpha = 0.812$). An SES index was created from the average z-scores of four indicators: median 2000 household income, median 2000 house value, 2000 percentage adult population with a college education or more and the 2000 percentage of residents with an income above the poverty line (Cronbach's $\alpha = 0.904$). For race, a variable capturing the 2000 percent African-American was used.

Reported violent crime data for the period 1 January 2002 through 30 June 2003 were obtained and geocoded (Lawton *et al*. 2005). All four counts (homicide, sexual assault, robbery, aggravated assault) were summed, converted to one rate per 100,000 population, and then converted to an annualised rate by multiplying by 0.67 (12/18). Note that the period reflected in the violent crime data ended about two months before the telephone survey was fielded.

Multicollinearity

Diagnostic tests revealed multicollinearity was not a concern at the individual level (all tolerances above 0.79). At the district-level, however, a high correlation existed between the status index and reported violent crime rate (Kendall Tau $b = -0.73$). To avoid a multicollinearity problem here, a partialled version of each was created. A partialled crime rate variable was created by regressing crime on SES, retaining the residual, and z scoring it. That residual was orthogonal to SES and captured the district variation in crime independent of SES. The partialled SES variable was

created as above, except by reversing the predictor and outcome. This captured the district variation on SES independent of the crime rate. Two separate analyses were then conducted. A partialled version of the SES variable was entered in a model with the crime rate, and a partialled version of the crime rate was entered in a model with the SES variable. In each separate analysis, tolerance levels and VIFs were acceptable. Appendix 1 includes a table with district-level correlations and tolerances for district-level variables in these two analyses.

Spatial autocorrelation of outcome

Unlike the previous research described above, the degree of spatial autocorrelation in these data was assessed. Tests of the global Moran's I statistic were carried out based on the district-level. Empirically Bayes adjusted log odds ratios for each outcome contrast were generated by the null (ANOVA) multilevel models and tested for spatial clustering with GEODA. For both contrasts the statistic was highly non-significant (Global I <0.03; $p >0.25$). Thus, it was not necessary to introduce a spatially lagged outcome variable in the analyses.

Statistical power for district predictors

Optimal design software (Raudenbush 1997) estimated statistical power for district predictors under different alpha levels. Focusing on the most theoretically relevant contrast between the two groups of concerned residents, with a conventional alpha (two tailed) level of 0.05 statistical power was more than adequate (0.97) for detecting strong effects (delta $=0.5$), but was weaker (0.67) than the suggested minimum (0.80) for assessing moderate sized effects (delta $=0.30$). Inflating alpha to 0.10 (two tailed) improved power for detecting moderate effects noticeably (0.79), almost to the recommended level of 0.80. We therefore adopted this adjusted alpha level ($p <0.10$) – for community level predictors only – in order to have sufficient statistical power to capture moderate sized impacts at this level.

Descriptive statistics for predictors and outcomes appear in Table 1. Appendix 1 includes the correlation matrix of district-level predictors for each of the two analyses, tolerances, and the Empirical Bayes estimates of the RRRs for each of the two contrasts for the police districts. (A map of Philadelphia police districts is available online at: http://www.ppdonline.org/ops/ops_districts.php.)

Analysis sequence

Hierarchical generalised linear models for multinomial outcomes (Raudenbush and Bryk 2002, pp. 325–332) were used. These multilevel models recognise correlated error terms at the district-level and provide other advantages linked to Empirical Bayesian estimation.

An initial ANOVA or null hierarchical model tested whether there was significant variation across police districts in the outcome for each contrast. Following, a large number of interim models were run with different combinations of both individual- and district-level predictors to be sure that the pattern of results was not significantly altered by the inclusion or exclusion of any particular variable at either level. District predictors were grand mean centred, and individual level predictors were left in raw

Table 1. Descriptive statistics.

Variable	Predictors						
	Name	Mean	Median	SD	Minimum	Maximum	N
Individual level							
Gender (M =0, F =1)	female	0.66	1	0.47	0	1	342
Race (White =1; Other =0)	whited	0.37	0	0.48	0	1	342
Education (highest degree; see note)	highd_m	3.83	3	1.83	1	8	342
Married household (=1; Other =0)	marrd	0.38	0	0.49	0	1	342
Age (years)	age_m	46.89	45	16.03	19	90	342
Children present in household (Yes =1; No =0)	kidsd	0.42	0	0.49	0	1	342
Weighting variable	phillywt	1.03	1	0.43	0.61	2.27	342
Police district level							
Annualised violent crime rate/100,000 persons, 1 January 2002–30 June 2003	viorate2	1569.57	1420.52	779.16	229.47	2997.59	23
Status index based on 2000 Census data	status	0	−0.12	0.9	−1.29	1.55	23
Stability index based on 2000 Census data	stabil	57.37	59.16	10.33	31.37	69.2	23
Percent population African-American, from 2000 Census	p_black	43.23	28.05	32.61	3.07	94.47	23
Portion of violent crime rate independent of status index	violpart	0	−0.16	0.98	−1.05	3.3	23

Table 1 (*Continued*)

Variable	Predictors						
	Name	Mean	Median	SD	Minimum	Maximum	N
Portion of status index independent of violent crime rate	statpart	0	−0.37	0.98	−0.76	3.42	23

Outcome
Unsupervised teen groups (Teen2)

Response categories	N	Percent
Not a problem (1)	121	35.38
Problem and police doing enough (2)	91	26.61
Problem and police not doing enough (3)	123	35.96
Total valid	335	97.95
Missing	7	2.05
Total	342	100
hlm contrast 2 (Group 2/Group 3)	0.739837	
hlm contrast 1 (Group1/Group 3)	0.98374	

Note: All *N*s unweighted. Data from 2003 survey of Philadelphia households, 2000 Census, and reported crime data. Census and crime data are for 23 Philadelphia Police Department police districts. For education, response categories: none (1), GED (2), HS diploma (3), tech certificate (4), associate's degree (5), bachelor's degree (6), master's degree (7), JC, MD or PhD (8).

form to control for compositional effects. Table 2 shows for each contrast two versions of a full model. In one, violent crime and partialled SES were entered, and in the other, SES and partialled crime. (Individual-level predictors are not shown for table clarity.)

Results

Ecological variation confirmed

For both contrasts, RRRs differed significantly across police districts in response to 'groups of unsupervised teenagers' ($p < 0.10$ when contrasting two groups of concerned citizens (Group 3 versus Group 2); $p < 0.01$ when contrasting those who saw no problem with those who saw a problem and were unhappy with the police response (Group 3 versus Group 1)).

Comparing concerned citizens: those who thought the police responsive versus those who did not

Table 2 is organised as follows. The first set of columns show the results from the hierarchical model with violent crime and partialled status. The second set of columns further to the right show results when partialling is reversed – the full impacts of status were included but only the status-independent partial impacts of crime were entered. The top portion of the table shows results for the most theoretically central contrast: how the relative risk that respondents will belong to Group 2 (concerned-and-satisfied citizens who think the police sufficiently responsive) versus Group 3 (concerned-and-not-satisfied citizens who think the police response insufficient) is affected by the various predictors. The bottom shows the results for the second, contrast: belonging to Group 1 (citizens who are not concerned about the unsupervised teen groups in their neighbourhood) versus Group 3 (concerned-and-not-satisfied). RRRs rather than coefficients are shown to ease interpretability. To simplify the table, results for individual-level predictors are not shown. These are discussed at the end of the results section.

The clearest message imparted by the results from the most theoretically relevant contrast was that community SES mattered in the predicted way. When only the portion of community status independent of violent crime was allowed to enter, concerned citizens were *more* likely to think police *responsive* rather than unresponsive if they lived in a *higher* SES district (RRR $= 1.71$; $p < 0.05$). The difference was slightly stronger when full rather than partialled community SES was allowed to enter (RRR $= 1.96$; $p < 0.01$). For each standard deviation increase in district SES, concerned citizens were anywhere from 56% (SES partialled) to 70% (SES not partialled) *more* likely to think the police responsive rather than unresponsive, i.e. that much more likely to belong to Group 2 versus Group 3.[12]

These results align with both the political economy and stratified incivilities perspectives outlined above. Residents with concerns about unsupervised teen groups were substantially more likely to think the police were 'doing enough' if their community had higher SES. This impact was *net of* the local violent crime rate, other key demographic features of communities, and demographic variation in survey respondents across communities.[13]

Table 2. Predicting perceived problem of and police responsiveness to unsupervised teen groups.

Model	ANOVA		All crime, partialled status				All status, partialled crime			

Contrast
    Category
        Predictor

Contrast 1. Group 2 (problem exists, police doing enough) versus Group 3 (problem exists, police *not* doing enough; base category)

			RRR	*t*	df	*p* <	RRR	*t*	df	*p* <
District level										
Stability			1.0045	<1	18	ns	1.0045	<1	18	ns
% African-American			1.0001	<1	18	ns	1.0001	<1	18	ns
Violent crime rate			0.9996	−1.837	18	0.10	–			
Partialled crime rate			–				1.2018	<1	18	ns
Status			–				1.9571	3.141	18	0.01
Partialled status			1.7054	2.151	18	0.05	–			
Random effects										
Intercept (OR)	0.721842		1.2444				1.2444			
District variation	0.19101	*p* = 0.08								

Table 2 (*Continued*)

Model	ANOVA				All crime, partialled status				All status, partialled crime			

Contrast
    Category
        Predictor

Contrast 2. Group 1 (no problem exists) versus Group 3 (problem exists, police *not* doing enough, base category)

			RRR	t	df	$p <$	RRR	t	df	$p <$
District level										
Stability			0.9734	-1.14	18	ns	0.9734	-1.14	18	ns
% African-American			0.9951	< -1	18	ns	0.9951	< -1	18	ns
Violent crime rate			0.9992	-4.43	18	0.001	–			
Partialled crime rate			–				0.9370	< -1	18	ns
Status			–				2.2934	7.254	18	0.001
Partialled status			1.5440	1.836	18	0.10	–			
Random effects										
Intercept (OR)	0.865215		0.6839				0.6839			
District variation	0.43634	$p < 0.01$								

Notes: Results from hierarchical generalised linear mulinomial models. RRR = relative risk ratio. Level 1 = 335 Philadelphia householders. Level 2 = 23 Philadelphia police districts. Cases weighted to reflect 2000 Census population of adults in Philadelphia households. Only ecological (Level 2) results shown. Results control for the following individual level compositional effects: gender, race, education, marital status, children in household and age. Individual level results not shown to simplify table. All individual level coefficients had non-significant effects for Contrast 1. For Contrast 2, married respondents were more likely ($p < 0.05$) to think unsupervised teen groups were not a problem as opposed to thinking they were a problem and the police response insufficient.
Contrast 1: relative risk ratios above one indicate that a higher score on the predictor is associated with being *more* likely to report unsupervised teen groups are a local problem and the police response is adequate, as compared to reporting that local unsupervised teen groups are a problem and the police response is *in*adequate.
Contrast 2: relative risk ratios ratios above one indicate that a higher score on the predictor is associated with being *more* likely to report unsupervised teen groups were *not* a problem, as compared to reporting that local unsupervised teen groups were a problem and the police response was inadequate.
Contrast 1 is the most theoretically crucial contrast.

The second message from the results for this contrast was that violent crime did shape concerned citizens' views about the sufficiency of police actions around this problem in the expected way. The crime contribution, however, depended on whether it was partialled on community SES.

As predicted by our extension of Klinger's model described above, if the full violent crime variable was allowed to enter, concerned citizens were *less* likely to think police were doing enough about teen groups in higher crime districts (RRR = 0.9996; $p < 0.10$). The RRR (0.9996) was small because it reflected the change for each additional violent crime per 100,000 residents. The impact, however, was substantial. For each standard deviation *increase* in the violent crime rate, concerned citizens were 24% *less likely* to think the police response to teen groups sufficient as compared to insufficient, i.e. that much less likely to belong to Group 2 (concerned and satisfied) versus Group 3 (concerned and not satisfied with police response). If only the portion of violent crime independent of SES was allowed in the model, however, crime's impact became non-significant ($t < 1$).

Thus, crime's impact was substantial and in the direction predicted by the proposed extension of Klinger's (1997) model. Police were seen as less responsive by concerned citizens if local crime was higher and thus, by inference, there were more demands on officers' time.[14] This substantial impact, however, depended in part on the ecological overlap of district violent crime and district SES. Since community SES drives crime rates (Pratt and Cullen 2005), and crime rates drive community SES (Taylor 1995), future work will need to sort out these dynamics in a longitudinal framework. Nevertheless, albeit in a qualified way, the current results can be interpreted as supporting the idea that police are *perceived* as responding with less vigour to low seriousness events in higher crime districts.

No individual-level predictors proved significant for this contrast.

Comparing concerned and unsatisfied citizens with non-concerned citizens

Results from the second contrast (Group 1 (not concerned) versus Group 3 (concerned, not satisfied with police response) with Group 3 still the base category) are relevant to both the stratified incivilities and political economy perspectives. The contrast does, however, mix the ecological determinants of perceived incivilities with perceived police responsiveness making it less central theoretically than the first contrast.

SES impacts were significant, regardless of whether the overlap with crime was partialled out or not. As shown in the bottom portion of the table, both full SES (RRR = 2.29; $p < 0.001$) and partialled SES (RRR = 1.54; $p < 0.10$) had significant impacts. As district SES increased, respondents were *more* likely to *not* see unsupervised teen groups as a problem (Group 1), as compared to seeing the teen groups as a problem to which police were responding insufficiently (Group 3).

Violent crime proved influential (RRR = 0.9992; $p < 0.001$) if it was not partialled on status. Ignoring the overlap between community SES and violent crime, a one standard deviation increase in the violent crime rate lowered the relative risk that a respondent would fall into Group 1 (not concerned about teen groups) versus Group 3 (concerned and not satisfied with police response) by 42.7%. If violent crime was partialled on community SES, however, its impact was not significant ($t < 1$).

One individual level effect emerged ($p < 0.05$). Respondents in married couple households, as compared to those in non-married households, were about 57% more likely to belong to Group 1 (not concerned) versus Group 3 (concerned and not satisfied).

Alternative analyses

Analyses using non-hierarchical multinomial logit models (MNLMs), replicating the scores on community indicators for each case, and adjusting for clustering of respondents by police district using the Huber/White adjustment for correlated error terms, replicated the key current results (results not shown). Focusing on the most theoretically relevant contrast (Group 2 versus Group 3), both full SES (RRR = 1.91; $p < 0.01$) and partialled SES (RRR = 1.73; $p < 0.05$) remained influential and in the expected direction. The RRR associated with un-partialled violent crime was identical (0.9992) to the ratio from the multilevel results, although it was slightly less significant ($p < 0.14$) due to a slightly larger standard error. The significance pattern and direction of individual level impacts was the same.

Summary

Among concerned citizens – those who thought that a pivotal social incivility was a problem in their community – police effort was *more* likely to be judged *in*adequate if they lived in a *lower* SES community. This result persisted even after removing from SES the portion overlapping with violent crime. Among these same citizens, the *higher* the local violent crime rate the *more* likely the police response was seen as *inadequate*. The impacts of crime, however, depended on whether its overlap with SES was removed through partialling.

Discussion

In many cities, and in Philadelphia in particular, residents connect unsupervised teen groups both to both serious crime and quality of life concerns (Podolefsky 1983). For police in a high crime city like Philadelphia, the importance of this concern is recognised, but how much time and effort they devote to it is constrained by resources and thus is to some extent discretionary, barring targeted initiatives (e.g. Taylor 2001, pp. 3–5). It seems likely, therefore, that police efforts around these concerns may be differential across communities. If so, then concerned residents' judgements of police efforts may be similarly patterned. In line with that thought, impacts of community-level demographic structure and crime on concerned citizens' opinions of police effort around this issue were examined here. The current investigation is relevant to previous work on community-level determinants of citizens' views about police, work which has produced inconsistent patterns for various ecological features. Limits of past work were addressed here.

Status

The results obtained here can be interpreted in light of the four theoretical perspectives outlined earlier. The clearest theoretical implication of the current

results centres on the importance of community SES for shaping the assessments of police held by concerned citizens.[15] It was the only feature of community fabric to prove influential in both partialled and un-partialled form. Higher SES made it more likely that concerned citizens would report police were 'doing enough' about this problem in their neighbourhood. These results support Weitzer's (1999) earlier finding that neighbourhood class not neighbourhood race was pivotal in shaping residents' views of police. The current work extends this link into a different aspect of judged police performance with a much larger number of communities in a different city.

Different theoretical perspectives would explain the relevance of SES in different ways. A political economy perspective would see it as differential support by a public agency for communities with varying exchange values. Some communities have residents who contribute more to the city wage base or the city property tax base. Part of maintaining that exchange value is responding to the type of issue examined here, especially in an era when many departments are convinced, albeit perhaps on slim evidence or incorrect reasoning (Harcourt 2001), that if you take care of the small incivilities you are simultaneously crime fighting (Kelling and Coles 1996).

A stratified incivilities perspective would come to the same connection through a different route. This pathway would highlight the difficulty of police working on community non-crime problems in lower SES communities given SES-linked neighbourhood organisational instabilities, and/or more confused organisational landscapes in lower SES locales. These difficulties make community-police partner-ing for co-production less likely (Taylor 2001, pp. 303–357).

There are policy reasons for learning which view may be more fitting. If the latter pathway is the responsible one, it is somewhat amenable to amelioration by changing local structures of neighbourhood governance. If the former pathway is responsible, the pattern is just part of the pattern of urban political economies (Gottdiener 1994) and less malleable.

Key to moving forward our understanding of SES effects will be gauging ecological variation in what police *actually* do. Although concerned citizens' assessments provide a handy global snapshot, their criterion validity with respect to a range of relevant police behaviours remains unknown. The two-part assumption made here is that: (a) cross-community differences in concerned residents' average perceptions of police effort correspond to *actual* district-level differences in police responsiveness rather than something else; and (b) those latter differentials arise from variations in workload. Each of these deserves separate examination in future work.

With respect to (a), a different possibility is that community SES shapes citizens' views of and values toward the police in ways that are somewhat independent of what police *actually* do in their locale. Rather, these could be structurally linked variations in value orientations (Kluckholn and Strodtbeck 1961). With respect to (b), future work will want to use more direct, resource-linked indicators of officer workloads across districts, perhaps using officers or officer hours per crime, or officers or officer hours per capita, and then learning whether variation in those more direct indicators of police workload link to perceived differences in police responsiveness and, most importantly, if these SES effects on perceived responsive-ness persist after controlling for a resource-based indicator of workload variation. A current study of Philadelphia police districts directly controlling for both workload

and resources found that the crime unfounding rate, a different indicator of nonresponsiveness, was inversely related to district SES (Taniguchi 2010). Although more definitive investigations are clearly needed, that work suggests that both actual police behaviours as well as perceived police responsiveness link to community SES.

Empirical work on urban service differentials suggests only modest inequities in either the locations of service distribution points relative to SES of populations (McLafferty 1982) or actual services delivered (Coulter 1980). The results here imply greater discrepancies across communities may become apparent if researchers focus just on citizens who are concerned about an issue and on issues where agencies have discretion in how they respond (Donnelly *et al.* 2006).

Crime

The proposed extension of Klinger's (1997) ecology of policing model anticipated concerned citizens would see police as less responsive in higher crime locales. That conceptual extension of the model to citizens' views about police received some support in the current results. In higher violent crime rate districts, citizens concerned about unsupervised teen groups were more likely to gauge the police response as insufficient. Our extension of this model suggests this may come about because police are busier with higher priority, more serious, clearly criminal events in these locales, as reflected in the higher violent crime rate.

Support for our conceptual extension of Klinger's (1997) ecology of policing model should be interpreted with extreme caution, however, for two reasons. First, crime's impact depended on it not being partialled on SES. Second, a more direct, district-level indicator for policing workload would be desirable such as officers per reported crime or officers per resident.

Racial composition

The one model receiving no support from the current results was the racialised perspective. Neighbourhood racial composition had no influence on the outcome after controlling for individual race.[16] Although one can never make any certain inference from null results, this might mean that earlier findings of concentrated disadvantage impacts were driven by SES rather than race. Learning the independent relevance of each remains crucial for theoretical and policy reasons (Massey 1998, Small and Newman 2001).

Limitations and strengths

The current study is afflicted by numerous limitations. It focused on only one city, and thus is in essence a case study with all the attendant limitations. Given the close intertwining at the district-level between violent crime rates and district SES, some confusion must remain about the relative contributions of each. Although the use of police districts was theoretically appropriate, different results might be obtained with different units of analysis given the modifiable area unit problem and related questions of aggregation or disaggregation biases (Openshaw and Taylor 1979). Perhaps most importantly, this study examined how groups of citizens in different communities perceived what police were doing and did not directly measure police

behaviour. Relevance for police *behaviour* across districts is not known at this time. Further, what role was played by police resource sufficiency across districts is not known. The study is cross-sectional and longitudinal results could be quite different. Just one policing issue was examined here; applications to police responses to other types of deviance or minor crimes are not known. Finally, as with any cross-sectional study of contextual impacts, non-random selection of resident households into districts stands as a potential alternate explanation for the district impacts observed.

Perhaps partially offsetting these limits are several study strengths including: an outcome separating perceiving a problem for which a police response is needed from the perceived adequacy of that response; focusing on a problem which is a key issue for both the systemic model of social disorganisation and the incivilities thesis; using the administrative units proposed by a key ecology of policing model; controlling for compositional effects; considering potential spatial adjacency effects; using multi-level models to cope with a number of potentially problematic features associated with nested data; and replication of the most key results using non-hierarchical models.

Closing comment

Developing stronger understandings of ecological, community-level variation in how police behave and in how groups of citizens in different community contexts perceive police responsiveness, are critical for growing a fuller understanding of links between context, police behaviour and citizens' locally shared views of police. Several theoretical perspectives are available for shaping these future efforts. Three of them received support in the current work. The main 'take away' lesson from the current work is that the relative socioeconomic standing of a community drives concerned citizens' *shared* views about police helpfulness around a key quality of life issue. Although a conceptually aligned finding, it is a deeply troubling one. It points toward significant policy challenges faced by local and national policing programs geared to increasing police responsiveness and visibility in the community.

Notes

1. Police work in other types of places like small towns (Kidder 1999) is similarly complicated. Some might even argue more complicated.

2. Some might object that not all citizens who report that unsupervised teen groups are a problem in their locale are concerned about the problem, and thus should not be called concerned citizens. The online Oxford English Dictionary includes as one definition of concerned 'affected, interested'. It is in that frame that the term is used here. If citizens recognise this is a problem it seems reasonable to infer they have some level of interest in this potential detractor from the quality of local life, and have thought how to some degree they themselves are affected by the issue. Whether these citizens are concerned in the sense that they are anxious or made uneasy by this problem is unknown and not inferred here.

3. Concentrated disadvantage is a widely used index of community demographic structure which combines indicators of African-American racial composition with socioeconomic status indicators like unemployment and poverty.

4. The additional leap made here is that controlling for composition of residents, *ecological variation* in perceived police responsiveness reflects to some degree the ecological variation in how police behave. Of course, community-differences in attitudes toward police also may contribute, but since those link strongly to individual demographics at the individual level, and since the latter are controlled, a stronger case can be made that there is some correspondence between perceived and 'actual' police responsiveness. Figuring out this degree of correspondence, and whether it varies and if so based on what conditions, and the police behaviours contributing to perceived responsiveness, of course make for important areas of future work.

5. Two police districts representing the airport and Fairmount Park were excluded.

6. Calculations by the authors from Table 3.110.2003 from the online Sourcebook of Criminal Justice Statistics (http://www.albany.edu/sourcebook/pdf/t31102003.pdf).

7. 2005–2007 American Community Survey demographic and household estimates from the US Census available through www.factfinder.census.gov.

8. This 77% was calculated from a sampling frame of 6098 telephone numbers, 3721 of which were contacted. Of these households, eligibility was not known for 496 and 1881 were ineligible. There were 1344 remaining telephone numbers, from which 1028 interviews were completed for the entire PAS/PLS survey.

   Of course, response rates using standardised formulas promoted by the American Association of Public Opinion Researchers prove much lower (http://www.aapor.org/Standard_Definitions/1481.htm). Using their standardised formulas, response rates ranged from 24.4% (AAPOR's RR1: minimum response rate) to 25.4% (AAPOR's RR3: response rate after estimating proportion of unknown eligibility cases would have been eligible) to 27.6% (RR5: computed from the total number of eligible households). These response rates roughly match the modal response rate of 25% for RDD surveys reported in a recent analysis of telephone survey response rates for over 200 studies done at a large state university survey research centre (McCarty *et al.* 2006).

   The contact rate, which is a household level rate and 'measures the proportion of all cases in which some responsible member of the housing unit was reached by the survey' (American Association of Public Opinion Researchers 2008, p. 28) ranged from 70.1% (AAPOR's CON1) to 73% (AAPOR's CON2). The cooperation rate which is 'the proportion of all cases interviewed of all eligible units ever contacted' (AAPOR 2008, p. 36) was either 34.8% (COOP1) or 36.1% (COOP3). Refusal rates were either 43.2% (REF1) or 45% (RR2) depending on the formula used.

   Readers of the opinion that the minimum response rate (25%) is extremely low should bear in mind that this is a typical rate for an RDD survey (McCarty *et al.* 2006). Further, low response rates suggest only *potential* non-representativeness, and identical surveys with markedly contrasting response rates can generate almost identical patterns of results (Keeter *et al.* 2000). Non-representativeness is more of an issue than non-response (McCarty *et al.* 2006). *Actual* representativeness is captured for the entire PAS by comparing respondent demographic profiles to 2000 census data, and was quite strong (see Institute for Survey Research 2003). Representativeness of the Philadelphia subsample, before and after weighting, is described in the following footnote. In accord with AAPOR (2008) recommendations, the following table is included:

	Philadelphia area survey	
Results	*N*	Percent
All numbers called	6098	100
All households contacted	3721	61.0
Unknown eligibility	496	8.1[a]
Ineligible numbers	1881	30.8[a]
Refusals	1821	48.9[b]
Completed interviews	1028	27.6[c]

Table assumes all contacted households are eligible. a = percent computed from total number of telephone numbers dialled. b = percent computed from the total number of eligible households. c = Percent computed from the total number of eligible households. This rate is equivalent to the AAPOR Response Rate formula RR5.

9. Randomly sampling one adult from all Philadelphia households in the 2000 Census Public Use Microdata Sample (PUMS) file, a 2 (gender) $\times$ 2 (race: White/non-White) $\times$ 2 (education: $\leq$HS/ >HS) table was created. Sample percentages in each cell were compared with PUMS percentages. Before weighting, the PUMS/interview discrepancies were greater than 5% for only two of the eight cells in this table (Dote 2006, p. 83): White male, more than high school (PUMS/interviews = 11%/5%); non-White females with no more than a high school education (PUMS/interviews = 19%/31%). Case weights were constructed and applied. Initial weights were modest (0.61–2.27) before taking multiple phone lines into account, and in only one cell above 2.0 (White males with better than high school education). After weighting, the sample/PUMS discrepancies in the $2 \times 2 \times 2$ table ranged from -2 to 4 (average = 0.25%).
10. HLM software labels these odds ratios but they are relative risk ratios because they depend on the base category selected (Gutierrez 2005).
11. Analyses (results not shown) with the concerned-satisfied group as the base category also were conducted and provided results that were conceptually identical to those shown here, although of course the relative risk ratios differed.
12. Figures for a standard deviation impact on RRRs were generated by Long and Freese's (2006, pp. 261–262) Stata add-on listcoef using the results from the non-hierarchical models. Key RRRs were the same from both hierarchical and non-hierarchical models.
13. Geographical inspection of the Empirically Adjusted RRRs ratios from the null ANOVA model with no predictors confirmed the statistical results. For example, those concerned citizens with the highest RRRs, i.e. most likely to judge the police responsive versus not, were in the outermost districts in the far northeastern (Districts 7 and 8) and far northwestern (Districts 5 and 14) corners of the city, as well as in a gentrifying and rapidly appreciating 'museum area' north and west of Center City (District 9). See Appendix 1 for the full table.
14. One reviewer has commented about this result as follows: 'this begs the question as to whether there is a resource issue here – the more crime the less responsive police are to other disorder because their time is taken up with criminal incidents. This would be an additional measure which would add validity to the argument'. The reviewer, of course, is completely correct. Violent crime is only a very indirect indicator of how much of officers' time is taken up with directly responding to those events. Preferable indicators would be serious crimes per officer, or per officer hour, for example. This issue is further addressed in the discussion.
15. The logic here commits neither the ecological (Thorndike 1939) nor the individual (Alker 1969) fallacy. These multilevel models link a macro-level community feature with varying probabilities across communities of membership in different groups for different groups of respondents. Underlying these macro $\rightarrow$ macro links are, of course, intervening cross-level, causal connections (Coleman 1990, pp. 3–22), to be investigated in future works.
16. District racial composition even had no influence if individual race was removed from the model.

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Appendix 1
Correlations of district-level predictors

Correlation matrices are shown below for the two sets of correlations among district-level ($n = 23$) predictors. The first matrix uses the violent crime rate and partialled SES. The second matrix uses SES and the partialled violent crime rate. Stabil = stability index; p_black = percent African-American; viorate2 = violent crime rate; statpart = SES after partialling on the violent crime rate; violpart = violent crime rate after partialling on SES. Tolerance for each predictor shown in last column.

	stabil	p_black	viorate2	statpart	Tolerance
Stabil	1.0000				0.410
p_black	−0.0860	1.0000			0.633
Viorate2	−0.3044	0.5626	1.0000		0.606
Statpart	−0.7013	−0.2061	−0.0000	1.0000	0.429
	stabil	p_black	violpart	status	
Stabil	1.0000				0.410
p_black	−0.0860	1.0000			0.633
Violpart	−0.7346	0.1991	1.0000		0.432
Status	−0.2117	−0.5651	−0.0000	1.0000	0.599

Odd ratios on two outcome contrasts by district

The table below shows the Empirically Bayes adjusted odds ratios (OR) for the two group contrasts analyzed. Group 3 (concerned, police not doing enough) = reference category. These are from the null multilevel model with no predictors. Contrast 1 is the most theoretically relevant.

Police district number	Contrast 1: Empirical Bayes OR: teen groups are a problem and police response sufficient versus teen groups a problem and police response not sufficient (Odds of: Group 2 versus Group 3)	Contrast 2: Empirical Bayes OR: teen groups not a problem versus teen groups are a problem and police response insufficient (Odds of: Group 1 versus Group 3)
1	0.852	1.059
2	0.822	1.050
3	0.685	0.772
4	0.759	1.042
5	1.078	1.559
6	0.871	1.189
7	1.186	2.074
8	0.944	1.410
9	1.404	2.658
12	0.484	0.505
14	0.993	1.354
15	0.800	0.948
16	0.561	0.584
17	0.491	0.513

18	0.935	1.341
19	0.536	0.548
22	0.501	0.446
23	0.611	0.681
24	0.550	0.581
25	0.583	0.605
26	0.660	0.722
35	0.926	1.207
39	0.731	0.805
Weighted average	0.722	0.865