Neighborhood Disorder and Local Participation: Examining the Political Relevance of "Broken Windows"

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Abstract Anyone who has lived in, driven through or walked by a "bad" neighborhood has a sense of the attributes that render such places unique: graffiti, litter, public intoxication and much more. According to the well-known theory of "broken windows," these readily observable corporeal characteristics signal neighborhood disorder and lead to increased criminal behavior. This article investigates the implications of disorder for political behavior, taking particular care to distinguish between the objective tangible conditions of disorder and residents' subjective interpretations of those conditions. Utilizing exceptionally rich data, this analysis reveals that while certain aspects of objective "reality" are consequential, perceptions of such reality are a more powerful mechanism through which neighborhood disorder impacts local political engagement. For some political outcomes, a heightened sense of the problems associated with disorder is linearly associated with an increase in participation. For others, the pattern is parabolic: those who perceive so little disorder that they remain content or so much disorder that they become disaffected are substantially less likely to take action to make their communities better. Ultimately, holding objective contextual features constant, the lenses through which residents interpret things like "broken windows" are critical determinants of grassroots politics. This information, combined with broader understandings of what shapes perceptions of disorder, lays the foundation for structuring policy in ways that facilitate grassroots activism—a vital component of the American democratic process.

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Anyone who has lived in, driven through, worked near or walked by a "bad" neighborhood has a sense of the tangible attributes that render such places unique: graffiti, litter, abandoned buildings, public intoxication and much more. These corporeal characteristics provoke strong, sometimes visceral reactions from residents and passersby. In fact, according to the popular theory of "broken windows," the directly observable material conditions of a neighborhood have an influence on the ways people respond to it. Proponents of this theory argue that minor but visible signs of neighborhood disorder[1] lead to more serious criminal violations (Wilson and Kelling 1982; Kelling and Coles 1996). Scholarly and public reactions to this claim have been numerous and contentious, sparking much argument over whether and how broken windows theory should inform policies on crime and punishment (Lott 2000; Levitt and Dubner 2005; Brook 2006; Harcourt and Ludwig 2006; Skogan 2008; Roberts 2011).

Expanding beyond the criminological roots of this debate, social scientists across a range of disciplines have begun to examine the broader consequences of disorder, arguing that it, "plays a role in undermining the stability of urban neighborhoods, undercutting natural processes of informal social control, discouraging investment and stimulating fear of crime" (Skogan 2012: 174). In short, accumulating evidence points to the multifaceted effects of disorder on social, economic and psychological outcomes (Casciano and Massey 2011; Hill et al. 2005; Christie-Mizell and Erickson 2007). Despite this literature's growing reach, scholars have remained silent about the *political* relevance of disorder. This is especially problematic because the possibility of transforming blighted neighborhoods is at least partially rooted in local political engagement (Florin 1989; Putnam 1993; Marschall 2004; Epstein et al. 2006). Without knowing the ramifications of disorder for local politics, we cannot adequately map the participatory pathways that might enable urban dwellers to forefend against it.

This article draws on the core intuition of broken windows theory—that salient physical and social neighborhood conditions impact behavior—in order to examine the relationship between local political participation and neighborhood disorder. Utilizing exceptionally rich data that includes both systematically observed *objective* markers of disorder and survey-based *subjective* perceptions of it, this analysis reveals that while certain aspects of objective "reality" are politically consequential, perceptions of such

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[1] There is much contention among sociologists and criminologists about how best to define the concept of disorder (Harcourt 2001; Kubrin 2008). I will not attempt to resolve this issue here. I agree that there are problems with the idea (many of which are succinctly described by Kubrin 2008) but nonetheless contend that it captures (however imperfectly) a phenomena that is important for conceptualizing neighborhood context and is therefore worthy of study by political scientists. With this in mind, I take a practical approach and follow Skogan (2012: 174) in characterizing disorder as including, "unsettling or potentially threatening and perhaps unlawful public behaviors" (social) and "overt signs of negligence or unchecked decay as well as the visible consequences of malevolent misconduct" (physical). This definition is broadly reflective of the approach that has been taken in the literature to date.

reality are a more powerful mechanism through which neighborhood disorder affects local political engagement. Perceptions of disorder have robust linear and curvilinear relationships with participation. In some cases, a heightened sense of the problems accompanying disorder is linearly associated with an increased likelihood to participate. In other cases the pattern is parabolic: those who perceive so little disorder that they remain highly content or so much disorder that they are sharply disaffected, are substantially less likely to take action to make their communities better places to live. Ultimately, even holding constant objective neighborhood features, perceptions of disorder are critical determinants of grassroots politics.

Various implications stem from these findings. As I discuss in more detail later, the policy levers and organizational strategies necessary for cultivating community participation can be seen in a different light when perceptions become a more salient emphasis. Through a lens focused on perceptions, proposed solutions to urban crime or neighborhood economic disadvantage are not only relevant vis-à-vis their direct bearing on lived conditions, but also because of their influence on how everyday people interpret their neighborhoods and (by extension) how they make decisions about whether to invest their political energies into solving local problems.

In addition to its potential policy applications, this research also has substantial scholarly value. It brings heightened conceptual clarity to the study of contextual effects by theoretically and empirically delineating the significance of the perception-reality distinction and applying it to political outcomes. To date, much of the work on neighborhood effects has proceeded without fully accounting for either the material physical qualities of neighborhoods or the varied subjective interpretations of such qualities. This too often has detached the inquiries of social scientists from the realities of ordinary people. The present research bridges that gulf by examining neighborhood disorder on both experiential and perceptual levels.

Objective Context and Subjective Perceptions: Why Make the Distinction?

The importance of physical and social environments to political behavior emerged as a theme in the study of American politics as early as the 1930s and has flourished since (Hauser 1974; Huckfeldt 1986; Huckfeldt and Sprague 1993; Cohen and Dawson 1993; Burbank 1995; Alex-Assensoh 1998; Oliver 2000; Anderson 2009; Gay 2012). Despite this profusion of first-rate research, political scientists have too often neglected the duality embedded in the concept of a neighborhood (Burbank 1995; Sampson and Raudenbush 2004; Santiago et al. 2010; Meersman 2005; Quillian and Pager 2001; Hadley-Ives et al. 2000; Ross 2000). As Lee and Campbell (1997) point out:

> …most neighborhoods… are social constructions with an existence rooted in residents' awareness as well as in particular physical settings. Their ambiguous character is nicely captured by the notion of a 'quasi-fact," a phenomenon that lies at the juncture of the subjective and objective realms.

Studies of neighborhood effects have largely overlooked this quality and have instead attempted to capture contextual influence by including census or other

"objective" data about the demographic composition of neighborhoods (e.g. percent in poverty). While such patterns are imperative, they do not adequately reflect what people encounter on their blocks everyday nor do they have uniform meanings across or within neighborhoods. As a result, demographics fall short of encompassing the assorted factors that account for the relationship between neighborhoods and political behavior.

Perhaps as a consequence of over reliance on neighborhood demographic measures, much of the contextual effects research has also lacked thoughtful inclusion of subjective understandings of neighborhood. Instead, researchers have tended to ignore or misestimate the role of perceptions (Books and Prysby 1988; Eagles 1995). Models of contextual effects recurrently include survey-based measures of neighborhood perceptions that vary widely in their content and theoretical meaning: sometimes they are intended to replace objective features that have not been explicitly modeled, other times they are the main channel through which neighborhood effects operate and many times there is no overt mention of their larger conceptual status.

Lacking satisfactory understandings of either objective neighborhood realities or subjective perceptions of those realities, many researchers overlook the question of whether and how the two are related. Those who do pay attention, particularly scholars in the fields of psychology and health, consistently find low to moderate agreement between objective measures of neighborhood and subjective perceptions of those same environments (Kamphuis et al. 2010; Kweon et al. 2006; Hadley-Ives et al. 2000; Ross 2000; Aneshensel and Sucoff 1996). In short, the existing evidence indicates that the concrete material conditions of a neighborhood and the subjective perceptions of such conditions are related yet very distinct phenomenon.

From the perspective of psychologists who study perception, this makes perfect sense. Theories of cognitive mapping have established that mental representations of the environment differ markedly from its physically measurable components (Brunswik 1956; Kaplan and Kaplan1982). Psychologists explain this by emphasizing the function of perception, which is much more than simply seeing what is "really" out there. Instead, it involves the organization and interpretation of sensory information such that even when a stimulus is held constant, there can be stark variations in how it is perceived conditional on the other aspects of the perceptual process (Pomerantz 2003).

Notwithstanding the complexity of this process, a handful of studies across various disciplines have scrutinized the connection between perception and reality as it regards the proper measurement of neighborhood effects. The basic consensus emerging from this literature is that objective context is a consistent determinant of perceptions, though only one of many and often not the strongest (Kamphuis et al. 2010; Franzini et al. 2008; Christie-Mizell and Erickson 2007; Sampson and Raudenbush 2004). Further still, while the task of appropriately gauging the effect of neighborhood context is best achieved by accounting for both objective and subjective measures, perceptions often have a larger direct effect than do objective factors (Aneshensel and Sucoff 1996; Christie-Mizell and Erickson 2007; Latkin and Curry 2003; Weden et al. 2008).

Notably, none of these insights are drawn from research that examines political behavior. Keeping this in mind, I glean knowledge from this literature and apply it
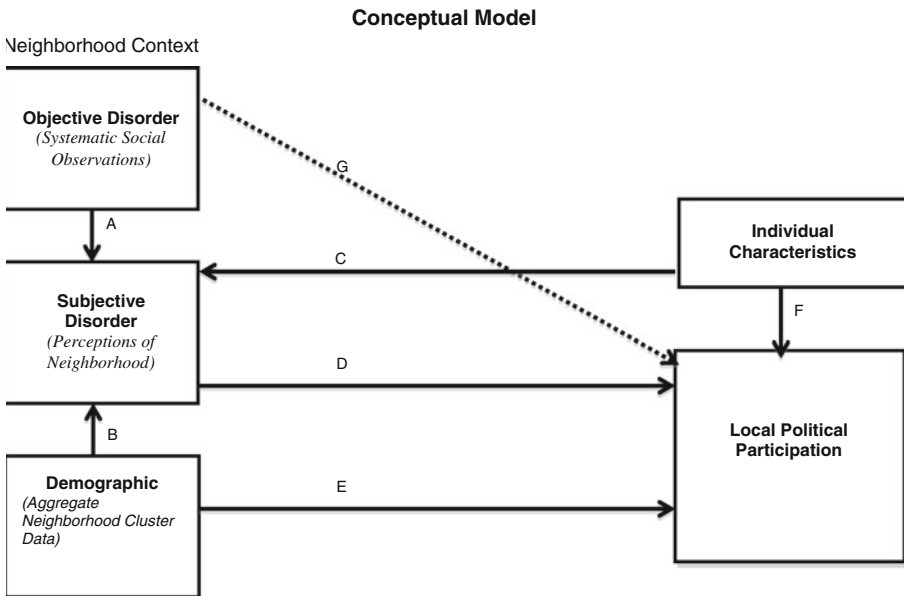
Conceptual Model

Fig. 1 This figure illustrates the conceptual model motivating the hypotheses about the relationship between neighborhood context and political participation. Note that subjective perceptions are strongly hypothesized to have a direct effect on participation (*line D*) and that objective disorder is weakly hypothesized to have a direct effect on participation (*dotted line G*)

to the political setting in order to clarify how neighborhood disorder influences local political participation.

Conceptual Model and Hypotheses

A first step in understanding the associations between objective context, subjective perceptions and participation is to properly specify the various relationships at work. To this end, I propose a conceptual model (see Fig. 1). As shown, the model suggests that disorder (both objective and subjective) along with demographic features and individual characteristics are key predictors of local participation. Among these, political scientists have carefully examined the participatory significance of individual (line F) and demographic (line E) factors (Huckfeldt 1986; Huckfeldt and Sprague 1993; Rosenstone and Hansen 1993; Verba et al. 1995; Cohen and Dawson 1993). Similarly, sociologists have been attentive to the relative importance of individual (line C), demographic (line B) and objective (line A) factors in shaping subjective perceptions (Sampson and Raudenbush 2004[2]; Franzini et al. 2008; Elo et al. 2009). The only relationships in this model that have

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[2] In fact, Sampson and Raudenbush (2004) use the data leveraged in this paper to establish the connection between subjective, objective, individual and demographic factors.

not been tested by social scientists are those that establish the influence of subjective and objective disorder on participation (line D and dotted line G, respectively).

In scrutinizing these relationships, I test two hypotheses. The first, *H1*, is a *perceptions-oriented hypothesis*, which asserts that subjective perceptions of disorder will have a direct effect on local participation (line D). H1 is rooted in the intuition that residents' sense of the severity of disorder in their immediate surroundings will shape their inclination to invest time and energy into local political activities. There is an abundance of empirical evidence indicating that perceptions of neighborhood and local participation are closely related (Kasl and Harburg 1972; Chavis and Wandersman 1990; Taylor 2001; Small 2004; Manzo and Perkins 2006). Manzo and Perkins (2006: 336) insist that, "Our thoughts, feelings, and beliefs about our local community places…impact our behaviors toward such places, thus influencing whether and how we might participate." Small (2004: xv) reinforces the notion that heterogeneous perceptual responses to neighborhoods likely have consequences asserting that, "…not everyone sees the same neighborhood through the same eyes [and] how residents see their neighborhood affects how they react to it and whether they are willing to 'get involved.'"

The research cited in favor of H1 has not expressly investigated the participatory outcomes associated with perceptions of *disorder* (as opposed to more general feelings about the neighborhood), thus omitting a uniquely important perceptual category. Despite this absence, the sociological and psychological literatures gives us strong reason for believing that perceptions of disorder, like their more general counterparts, should matter. As such, I expect that H1 will be supported by the findings that follow.

The second hypothesis that lies at the core of the paper, H2, is a *reality-oriented hypothesis*, which posits that objective disorder will have a direct effect on local participation (dotted line G). Previous studies strongly support the claim for an indirect effect of objective disorder (via perceptions) by consistently showing that such disorder shapes subjective perceptions (Sampson and Raudenbush 2004; Christie-Mizell and Erickson 2007; Franzini et al. 2008; Elo et al. 2009; Kamphuis et al. 2010). This has been well enough established in the literature that I do not test it here. If H1 proves true, then we have good reason to suppose that objective disorder influences participation *indirectly* by shaping perceptions of disorder. The more unsettled matter, however, involves the *direct* consequence of objective disorder. To date, the research record is void of evidence about the connection between objective disorder and local participation. Further still, ordinary deductive reasoning can supply accounts both for and against a direct relationship.

On the one hand, even per the original broken windows theory, a key aspect of disorder is its visibility, which presumably links disorder to behavior via signaling (Wilson and Kelling 1982). To the extent that a signal must be perceived in order to be effectual, perception should be the primary avenue through which objective disorder *indirectly* operates.

At the same time, there is at least face validity to the alternative prospect that objective neighborhood disorder has a *direct* effect on political participation through channels separate from perception. Weden et al. (2008: 1258) make an argument that buttresses this scenario in saying that, "objective measures may capture

important structural aspects of the environment that the respondent may not or cannot perceive." They give the example that neighborhood disadvantage may alter access to local resources and consequently affect other outcomes, even if people do not directly perceive these associations at work. In a case like this, disorder might function irrespective of signaling.

Ultimately, inadequate empirical verification dampens the (a priori) strength of our confidence in H2 (hence the dotted line G). The models that follow will provide an evidentiary basis for either fortifying or further reducing such confidence going forward.

Before moving on, it is worth noting two things. First, H1 and H2 are not mutually exclusive. While the above assertions position H1 as the stronger of the two postulates, it is entirely possible that both will be confirmed. Second, I purposely say nothing about the direction (e.g. positive, negative) of the relationships between subjective perception and political participation. This is because the research record is mixed in this regard. Much existing scholarship links negative perceptions of neighborhood to depressed participation. In an in-depth exploration of community participation in a Boston neighborhood called Villa Victoria, Mario Small discovered that older cohorts of neighborhood residents who perceived Villa Victoria as, "a beautiful place to live" were more active participants in neighborhood activities than their younger counterparts who had less positive views of the neighborhood. Small identified, "a shift in the perception of the neighborhood by residents" as a "mechanism by which participation declined in Villa Victoria" (Small 2004: 87). Other studies also buttress this logic: Ross et al. (2001) find that perceived neighborhood disorder is associated with feelings of powerlessness; Manzo and Perkins (2006) find that perceptions of inclivities can lead to decreased involvement in community organizations; Rohe and Basolo (1997) find that as the perception of neighborhood improves people are more likely to attend social and political meetings.

Yet, there are at least two alternatives that also have some backing in the literature. First, negative perceptions may mobilize residents, leading them to become more involved in efforts to improve local conditions (Haney 2007). Second, the relationship between perceptions and participation may be non-linear, going in one direction under certain conditions and another direction under others (Wandersman et al. 1981). Given the indeterminacy of the literature, H1 underscores that perceptions are important but remains neutral with respect to the direction of the effect.

Data

In elucidating the relationship between disorder (objective and subjective) and participation, I integrate three types of data: (1) individual level survey data measuring perceptions of disorder and other individual attributes, (2) systematic social observations (SSO) providing independent assessments of objective disorder, (3) aggregate data gauging the basic demographic makeup of neighborhoods. All of the data is drawn from the 1995 Project on Human Development in Chicago Neighborhoods (PHDCN).

One potential drawback of the PHDCN data is that it is limited to Chicago. Yet, while the truncated range of the data is a weakness of breadth, it is a strength of depth. Narrowing the scale of the data collection made it feasible to gather information that is extraordinarily rich. Moreover, even standing alone, findings from PHDCN data can tell us about patterns in one of the largest urban centers in the country, thus verifying whether the variables under scrutiny are relevant, even if not universally so (the latter claim would be fodder for future research).

Survey Data

The individual level data comes from the PHDCN Community Survey.[3] This survey involved a multistage probability sample of 8,782 Chicago residents. The first step in the sampling process was to delineate 343 "neighborhood clusters," (i.e. aggregated census tracts). The predominant criteria in the formation of the Neighborhood Clusters (NCs) was that they were ecologically meaningful, composed of geographically contiguous census tracts, internally homogenous on key census indicators (i.e. race and class) and informed by local geographic knowledge.[4] These are not neighborhoods per se, but they are geographic units that can feasibly be conceptualized as communities both from the perspective of the people living there and in terms of demographic homogeneity. Once the NCs were established the sampling proceeded in stages: city blocks were sampled within each NC, dwelling units were sampled within blocks and one adult resident was sampled within each dwelling unit.

There were three sets of variables culled from the individual level survey data: (1) political participation variables, (2) perceptions of physical and social neighborhood disorder, (3) important individual level controls. Summary statistics are provided in Table 1.

Political Participation Measures

Perhaps as a testament to its sociological lineage, the PHDCN community survey does not contain the most traditional measures of political participation such as voting, registration, candidate choice or mainstream political attitudes. Even so, there are at least two variables that involve political action on the local level, a phenomenon we would expect to be most proximately impacted by neighborhood disorder. Specifically, respondents were asked whether they had: (1) spoken to a politician about a neighborhood problem, (2) attended a meeting of a block or neighborhood group about a neighborhood problem. While these dependent variables have a moderately high correlation with one another (.60), they represent distinct political behaviors. The first outcome is connected to the formal political system while the second taps into a broader kind of political participation that happens outside of the purview of the sate. While similar proportions of the sampled

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[3] Earls et al. (1997).

[4] See the following for more details on the sampling methods associated with PHDCN: http://www.icpsr.umich.edu/PHDCN/sampling.html.

Table 1 Summary Statistics

Variable	Min	Max	Mean	Standard deviation
Individual level				
Spoke to politician	0 (=no)	1 (=yes)	.29	.45
Attended meeting	0 (=no)	1 (=yes)	.27	.44
Age	17	100	42.7	16.7
Sex	0 (=male)	1 (=female)	.59	.49
Latino	0 (=no)	1 (=yes)	.25	.43
African-American	0 (=no)	1 (=yes)	.39	.49
Income	1 (<$5 K)	15 (>150 K)	5.7	3.5
Education (years of education)	0	17+	12.3	3.9
Mobility (# times moved)	0	11	.95	1.4
Home owner	0 (No)	1 (Yes)	.45	.50
Perceptions of disorder	6 (=fewest perceptions of disorder in neighborhood)	18 (=most perceptions of disorder in neighborhood)	10.8	3.9
Neighborhood Level				
Physical disorder	0	17.5	5.4	2.2
Social disorder	0	5	.14	.37
Income	1 (<$5 K)	13 ($100–124.9 K)	5.7	1.7
Black	0	1	.39	.40
Tenure length (years in neighborhood)	2	24	10.3	4.4

population engage in each of these activities (29 percent report having spoken to a politician and 27 percent report having attended a meeting), not all of the same people who participated in one activity also participated in the other. Substantial minorities of the sample picked one form of participation over the other: 33 percent of the people who attended a meeting, did not speak to a politician while nearly 38 percent of those who spoke to a politician, did not attend a meeting. In the event that the overlapping but distinct subsets of people engaging in these political activities mattered for the questions of interest in the paper, I modeled them separately.

Perception Measures

In order to gauge perceptions of physical and social neighborhood disorder, I relied on six pertinent questions about how much of a problem respondents saw the following in their neighborhood: (1) litter/trash, (2) graffiti, (3) vacant housing/storefronts, (4) drinking in public, (5) selling or using drugs, (6) teenagers causing a disturbance. Respondents could rate each of these phenomenon on a three point scale where 1 = not a problem 2 = somewhat of a problem and 3 = a big problem. To make the analysis more tractable, I used these six perceptual items to construct a

composite scale that ranged from 6 to 18, where increasing scores on the scale represented increased perceptions of disorder (Cronbach α = .86).[5]

Demographic/Control Measures

Seven measures were included as individual level controls: age, education, household income, a dummy variable indicating whether a respondent was Latino, a dummy indicating whether a respondent was Black, a measure of mobility (number of times the respondent had moved in past five years) and an indicator for home ownership. While there were many more variables available, I limited the controls to those most grounded in the literature (Rosenstone and Hansen 1993; Verba et al. 1995; Bolan 1997; Lake and Huckfeldt 1998; Sampson et al. 2002; Aneshensel and Sucoff 1996; Christie-Mizell and Erickson 2007; Sampson and Raudenbush 2004; Rohe and Stegman 1994).

Systematic Social Observation Data

The second source of data was the Systematic Social Observation (SSO) data, also collected for the PHDCN.[6] SSO is a standardized method for directly observing the physical and social characteristics of neighborhoods, one block at a time. To assemble this data, trained employees of NORC were given explicit rules for recording and observing visual physical and social characteristics of various Chicago neighborhoods. More specifically, a driver, videographer and two trained observers drove an SUV at less than 5 miles per hour down every street of 196 Chicago Census tracts.[7] As they drove, video cameras on each side of the vehicle recorded the social activities and physical features of each side of the block while the observers simultaneously took a log of what they saw. The observation took place on all days of the week from 7 a.m. to 7 p.m. over the course of 6 months. In total, 23,816 face blocks (e.g. one side of the street) were observed. Trained coders coded all observer logs along with a random sample of over 15,000 face block videotapes. As a check on reliability, new coders randomly recoded 10 percent of all the data and produced codes with 98 percent inter-coder reliability (Sampson and Raudenbush 1999, 2004).

The data generated from this observational process was vast. It included information on land use, traffic, the physical condition of streets and buildings, the presence or absence of various types of neighborhood institutions and much more

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[5] I considered creating two scales: one measuring perceptions of physical disorder and another gauging perceptions of social disorder. My primary reason for not doing so was theoretical. I had no strong theoretical impetus for assuming that individuals' interpretations of their neighborhoods are filtered via such a dichotomy. Furthermore, a principal components analysis revealed that the combined items reflected one latent variable. More specifically, the first component had an Eigen value of 3.6 and captured over 60 percent of the variation between scale items. Finally, to be sure that this measurement decision did not impact the subsequent analyses, I re-ran the main models using two separate perceptions scales and found little difference in the results.

[6] Earls et al. (2002).

[7] These tracts were chosen based on a stratified probability sample designed to maximize race and class variation.

(Sampson and Raudenbush 1999). For the purposes of this project, I followed Sampson and Raudenbush (2004) in constructing two theoretically motivated SSO scales measuring physical and social disorder. The physical disorder scale consisted of 7 items gauging the material presence of: (1) beer bottles, (2) litter, (3) syringes, (4) cigarettes, (5) condoms, (6) abandoned cars and (7) graffiti. The social disorder scale measured the following five activities: (1) adults loitering, (2) open alcohol consumption, (3) drugs being sold, (4) intoxicated persons on the block face, (5) prostitution.[8] The scales were coded such that higher scores indicate increased observations of disorder. Arguably, each scale taps into substantively different phenomenon as evinced by their low correlation with one another (.10).[9]

Neighborhood Demographic Data

In order to control for neighborhood level demographic patterns, I aggregated data from the individual level survey to the Neighborhood Cluster level.[10] The demographic controls include measures of mean income, percent black, and mean tenure length (e.g. average number of years NC residents lived at their current address).

Analytical Strategy and Statistical Models

Given the use of observational data and all of the limitations that come with it, the subsequent analyses include four strategies meant to make the findings as robust as possible. First, I include a range of basic controls to avoid omitting critical variables. Second, I address the nested structure of the data via multilevel modeling. Third, I account for non-linear patterns. Finally, I conduct robustness checks using different model specifications to confirm that the key findings are not spurious or idiosyncratic.

I test H1 and H2 via multilevel logistic regression. Hierarchical analyses are uniquely suited to questions that involve multilevel effects (Bryk and Raudenbush 2002; Steenbergen and Jones 2002). In the equations specified, the individual level

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[8] For more information about how each of these phenomenon were coded see Sampson and Raudenbush (1999): "Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods."

[9] In addition to their low correlation, both scales had relatively high Eigen values (above 1). However, it is important to note for these measures in particular that the construction of the scales was driven more by theory and prior research than by the principal components analysis.

[10] I took this approach because ICPSR would not release the census data that was collected due to pending confidentiality issues. They also could not specify when the census data would be available nor would they provide census track numbers that would allow me to gather the data independently. Hence, to avoid entirely omitting neighborhood level demographic controls from the models, I decided to aggregate the level 1 data at the Neighborhood Cluster level. While this approach is not ideal, it is acceptable for several reasons. First, given the large sample size, NC's contained an average of 33 (and a maximum of 62) persons each. Second, the Neighborhood Clusters were chosen based on internal homogeneity so having information about a sizeable handful of people within a cluster should be a rough proxy for information about the NC more broadly.

variables were modeled at level one and the neighborhood variables were modeled at level two. Since both of the political participation variables were binary, I estimated Bernoulli choice random intercept models with a logit link function (Bryk and Raudenbush 2002: 291–309). I held the slopes constant.[11] Specifically, the level one model was:

$$Participation_{ij} = \beta_{0j} + \sum_{q=1}^{9} \beta_{qj} X_{qij} + \gamma_{ij}$$

In this equation, participation$_{ij}$ is one of two measures of political participation in neighborhood j as reported by respondent i; β_{0j} is a neighborhood specific intercept; X_{qij} is the value of one of the specified predictors[12] (q) associated with respondent i in neighborhood j; β_{qj} is the partial effect of predictor q on participation and r$_{ij}$ is the individual level random error. The nine predictors (q) at level one include the seven controls described earlier as well two variables for perceptions: one for the perception scale described above and another for a quadratic term (the square of the perception scale), which was added to allow for the possibility of non-linear effects.

At level two, the level 1 intercept (β_{0j}) is modeled as follows:

$$\beta_{0j} = \gamma_{00} + \sum_{q=1}^{5} \gamma_{qj} X_{qij} + u_{oj}$$

In this equation, Υ_{00} is the mean participation in a given neighborhood, X_{qj} is the value of the predictor q associated with neighborhood j, Υ_{qj} is the partial effect of predictor q on mean neighborhood participation and u$_{oj}$ is a neighborhood level random error. The five level 2 predictors (q) include the SSO scales of objective physical and social disorder,[13] percent black in neighborhood, mean neighborhood income and mean neighborhood tenure length.[14]

Findings

The results are presented in Tables 2 and 3. Bearing in mind the number of models, I will concentrate on the main findings. Each of the tables was organized to illustrate

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[11] Initially, I considered allowing for the possibility that slope of perceptions might vary based on the race or class composition of the neighborhood. This would mean that the effect of perceptions would be different for different kinds of neighborhoods. I tried several models to this end -but there was little evidence of significant variation in the slopes across neighborhood clusters. Since varying slopes were not critical to the hypotheses I proposed, I ultimately opted for the simpler and more parsimonious varying intercept model.

[12] In these and all the multilevel models that follow, Level 1 predictors are centered at the group means to facilitate sound and more easily interpretable empirical results (Bryk and Raudenbush 2002; Enders and Tofighi 2007).

[13] I did not include a quadratic term in the level two model. There is little precedent in the literature for doing so. However, I nonetheless tested for the possibility that there is a non-linear relationship between objective disorder and participation and found that this was not the case.

[14] In these and all the multilevel models that follow, Level 2 predictors are centered at their grand (or overall) means (Bryk and Raudenbush 2002; Enders and Tofighi 2007).

Table 2 Estimates predicting speaking to a politician

	Model 1 (individual and neighborhood demographics)	Model 2 (+objective observed disorder)	Model 3 (+perceptions of disorder)
Individual level			
Age	.01 (.00)***	.01 (.01)***	.02 (.01)***
Education	.12 (.01)***	.09 (.03)***	.09 (.03)***
Income	.07 (.01)***	.03 (.03)	.04 (.03)
Latino	−.09 (.10)	−.10 (.23)	−.28 (.25)
Black	−.04 (.09)	.28 (.27)	.26 (.23)
Mobility	−.15 (.03)***	−.11 (.06)*	−.10 (.06)*
Home owner	.91 (.07)***	.98 (.18)***	.91 (.20)***
Perceived disorder	–	–	.06 (.03)**
Perceive disorder (quadratic)	–	–	−.02 (.01)***
Neighborhood level			
Objective social disorder	–	−.54 (.22)**	−.52 (.24)**
Objective physical disorder	–	−.04 (.04)	−.05 (.04)
Mean income	.18 (.02)***	.12 (.07)*	.08 (.07)
Proportion black	.01 (.17)	−.70 (.47)	−.47 (.49)
Mean tenure length	.06 (.01)***	.07 (.03)***	.06 (.03)**
Level 1 N	7,480	1,191	996
Level 2 N	343	75	74

All models based on multilevel logistic regression

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

the results of successive alternative models. Model 1 includes only basic individual and neighborhood demographics.[15] Model 2 adds the scales for objective physical and social disorder. Finally, Model 3 adds perceptions of disorder along with its quadratic transformation.[16]

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[15] In Tables 2 and 3, the results did not change substantively when I switched the ordering of models 1 and 2. In other words, models with just the basic individual level predictors and the objective measures of disorder (without demographic neighborhood predictors OR perceptions) showed similar patterns.

[16] Note that the sample size decreases dramatically in the move from Model 1 to Model 2 and then again (although less so) in the move from Model 2 to Model 3. The initial decrease is a result of missing objective disorder data. Fortunately, the missingness of this data is random, as PHDCN Systematic Social Observation data was collected and coded only for a random subset of block faces in Chicago and thus only for a random subset of the people in the survey sample. It is instructive to note that subsetting the initial models so that they only include observations with full SSO data (e.g. dropping all observations without full data on SSO variables) produces substantively similar results as those shown in Table 2. The decrease from Model 2 to Model 3 is more problematic because it is mostly a result of missingness in response to the perceptions variable, which may not be random. To address this I took two steps. First, I re-ran the models based on subsetted data that only includes observations with no missingness on key variables, none of the substantive effects change. Hence, differences in the composition of the sample

Table 3 Estimates predicting attending a meeting

	Model 1 (individual and neighborhood demographics)	Model 2 (+objective observed disorder)	Model 3 (+perceptions of disorder)
Individual level			
Age	.01 (.00)***	.00 (.00)	.01 (.01)
Education	.09 (.01)***	.05 (.03)*	.02 (.03)
Income	.05 (.01)***	.05 (.03)*	.05 (.03)*
Latino	−.06 (.10)	−.26 (.23)	−.37 (.25)
Black	.03 (.09)	−.01 (.21)	−.13 (.23)
Mobility	−.21 (.03)***	−.18 (.06)***	−.18 (.07)***
Home owner	.95 (.07)***	1.2 (.19)***	1.3 (.20)***
Perceived disorder	–	–	.06 (.03)**
Perceive disorder (quadratic)	–	–	−.00 (.01)
Neighborhood level			
Objective social disorder	–	.16 (.18)	.14 (.19)
Objective physical disorder	–	−.04 (.04)	−.05 (.04)
Mean income	.17 (.02)***	.19 (.06)***	.19 (.07)***
Proportion black	−.42 (.17)**	.50 (.45)	.69 (.49)
Mean tenure length	.03 (.01)***	−.02 (.02)	−.11 (.08)
Level 1 N	7,462	1,184	990
Level 2 N	343	75	74

All models based on multilevel logistic regression

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Results

The empirical results support H1 across the board: perceptions of disorder have strong positive associations with both forms of local political participation. Since the perceptions scale is coded such that higher scores represent increasing perceptions of disorder, this means that as perceptions of disorder increase, the likelihood of speaking to a politician or attending a meeting also increases. However, the story does not end there. For speaking to a politician, the quadratic term (which denotes curvature) is negative and significant. This means that increasingly negative perceptions are associated with an increasing likelihood of speaking to a politician *at a decreasing rate*. Thus, the observed increase is dampened by the quadratic element of the relationship exerting a downward force

Footnote 16 continued

across models do not appear to drive the results. Second, I imputed the missing observations in the perceptions scale (based on research referenced above indicating how best to predict perceptions) and ran the models with this imputed data. Again, none of the substantive effects change. Overall, the sample size changes and missing data do not appear to bias any of the findings offered in the paper.
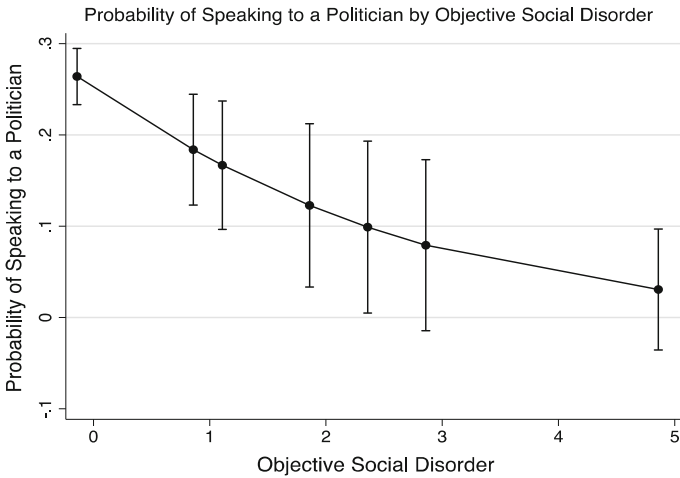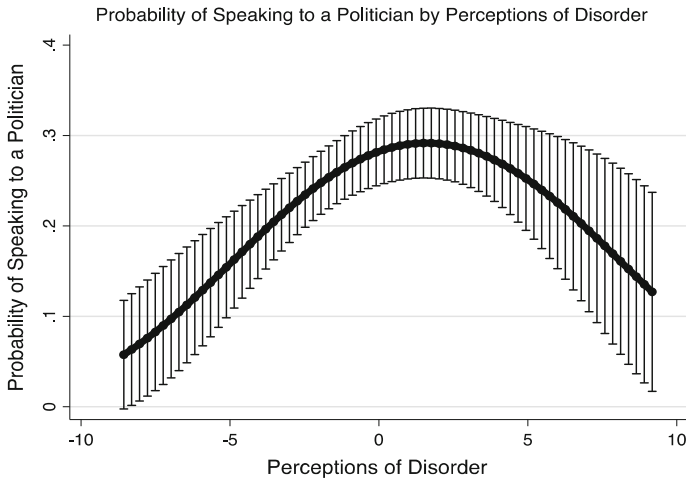
Fig. 2 This figure shows a significant linear decrease in the predicted probability of speaking to a politician as levels of objective social disorder increase (ceteris paribus)

that causes participation to level off and descend. Substantively, this indicates that neighborhood residents on the extremes—those with a very negative or very positive perspective towards their environment—are less likely to participate via formal contact with an elected official than those who fall in the middle. The results are more mixed with respect to H2. For one of the dependent variables (attending a meeting), H2 is inaccurate: objective disorder (physical or social) has no direct effect on participation. However, for the other dependent variable (speaking to a politician), H2 is partly correct: objective *social* disorder is a consistently strong determinant. More precisely, as objective social disorder increases, a respondents' likelihood of speaking to a politician decreases. Before discussing these findings, it is helpful to look at the magnitude of the estimated correlations.

Magnitude of Effects

Both subjective perceptions and socially rooted objective markers of disorder have a substantively sizable association with participation. As shown in Fig. 2, ceteris paribus, people living in areas with the highest measured levels of objective social disorder are 23 percentage points less likely to speak to a politician than their counterparts in neighborhoods with the lowest levels of such disorder. Although strong, this is the only evidence of a relationship between participation and objective disorder: social disorder has no discernable impact on the other dependent variable (attending a meeting) and *physical* disorder is not a significant predictor of either outcome.

Contrastingly, subjective perceptions of disorder have strong associations with both of the dependent variables in question. Respondents with mean perceptions of disorder are 22 percentage points more likely to speak to a politician than those on the minimum end of the perceptions range and 15 percentage points more likely

Fig. 3 This figure shows the significant curvilinear relationship between speaking to a politician and perceptions of neighborhood disorder (note that the scale of the perceptions variable is different than indicated by the summary statistics due to its subsequent group mean centering)

compared to those on the maximum end (see Fig. 3). These patterns highlight the curvilinear relationship between perceptions and speaking to a politician.

The story is somewhat different when it comes to meeting attendance. For this outcome, there is an overall decrease: people who report perceiving the least disorder (see Fig. 4) are 14 percentage points less likely to attend a meeting than those who report perceiving the most disorder. There is no significant curvilinear component of this relationship: respondents with mean perceptions of disorder are 12 percentage points *more* likely to attend a meeting than those with minimum perceptions and two percentage points (a statistically indistinguishable difference) *more* likely to do so than respondents who perceive the most disorder.

Overall, these findings highlight the extent to which perception is a critical determinant of individuals' decisions about whether or not to participate at the local level. Most notably, perceptions influence participation both linearly (best perceptions = most participation) and curvilinearly (moderate perceptions = most participation).

Discussion

There are at least three patterns in the findings that compel more detailed discussion: (1) that a curvilinear relationship exists between speaking to a politician and perceptions of disorder while a linear relationship exist between attending a meeting and such perceptions, (2) that objective social disorder has a direct effect on speaking to a politician yet has no direct effect on attending a meeting, (3) that the coefficients on objective disorder generally do not change after incorporating perceptions into the models. Patterns 1 and 2 are closely related insofar as they both have to do with why we might see divergent results across the two outcomes examined. Although the data
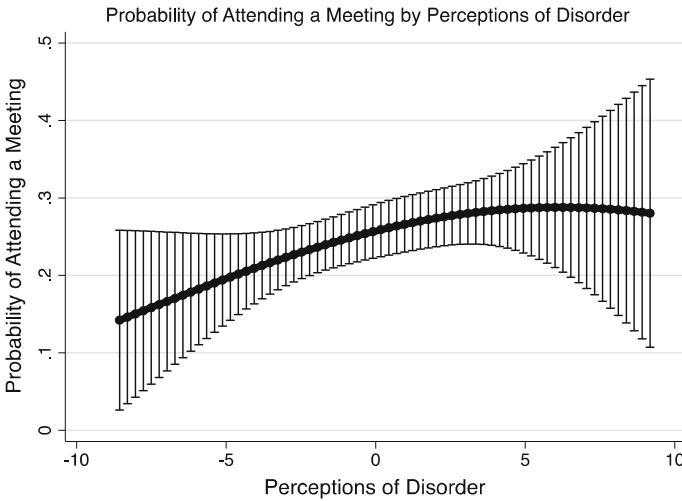
Fig. 4 This figure shows the significant linear increase in probability of attending a meeting as perceptions of neighborhood disorder increase

does not enable me to explain this with ideal empirical precision, there are three insights relevant to making sense of it. First, the very motivation for considering these dependent variables separately was because speaking to a politician and attending a meeting are fundamentally different approaches to solving local problems, which we might therefore expect to have distinct determinants. To grasp the implications of this, it is instructive to examine some of the dissimilarities between PHDCN respondents who participated by speaking to a politician (only) and those who participated by attending a meeting (only). Namely, a series of *t* tests (not shown) demonstrate that meeting attenders were more socially and organizationally embedded: they were significantly more likely to be a part of a block group, to have joined a neighborhood watch, to report having more neighborhood ties and to agree that most of their neighbors are willing to help one another.

This provides at least a prima facie explanation of why we might see divergent results between these two outcomes. Those who attend meetings are likely shielded from the negative effects of social disorder by their connection to more positive local influences and activities. In the same way, they may be less inclined to turn to apathy at the extremes of neighborhood perceptions because they are involved in larger organizational networks that keep them engaged.

Additionally, one reason we might see a special relationship between social disorder and speaking to a politician (and see no such relationships between social disorder and attending a meeting *or* between physical disorder and either of the dependent variables) is that *people + formal political authority* make a more complex calculus for participation. Engagement with political officials is a distant and less accessible activity for most people. The PHDCN data confirm this: among the entire sample, less than three percent of respondents reported belonging to an explicitly *political* group (compared to 11 percent who reported belonging to a neighborhood watch and 12 percent who belonged to a block group). Insofar as inertia works especially

against the act of reaching out to a political representative, it stands to reason that this form of participation is more vulnerable to the influences of social disorder and more susceptible to being swayed at the extremes of perceptions of disorder.

Moreover, the residents of blighted neighborhoods might (with good reason) not feasibly believe that local political agents can do much about drug dealers, drunkards and the other societal "deviants" that contribute to social disorder. A personal example, while anecdotal, is illustrative of this argument. I once lived in a distressed neighborhood on the South side of Chicago. After moving in, I soon discovered that some of my neighbors were drug dealers. Upon talking to one of the residents of my building about the issue, I learned that she had inquired with an older woman who lived nearby about whether someone should approach the alderman of our political ward to talk about the local drug problem. In response to this inquiry, the older woman had insisted that such a tactic would not help. Even if the offending parties were somehow removed, other (perhaps worse) dealers would emerge to meet the seemingly voracious neighborhood demand for narcotics. Furthermore, making too much noise might cause officials to take drastic actions, like performing drug raids on nearby houses and pushing for stiffer sentences for drug dealers. Some of dealers were nice people with strong local social networks and although the older woman would prefer that they change their ways, she doubted jail would help. On top of all this, she noted that one of the local drug runners once worked a good job in construction and only turned to drugs after hurting his leg and being left with few other options for taking care of his family. As this (true) story reflects, *people* (such as those that lie at the core of social disorder), complicate the participatory equation, particularly when it comes to deciding whether to mobilize (often distant) political authorities against (sometimes close) neighbors and friends. Attending a meeting does not implicate social disorder through political authorities and thus would not tap into this kind of dynamic. Nor does physical disorder involve people to an extent that would introduce such challenges.

Abstracting from the details of the example for a moment, the point is this: it appears that contacting a political official and social disorder are each unique in ways that explain both why they relate to one another and why the former has a different (i.e. curvilinear) relationship to perceptions of disorder than does attending a meeting.

As mentioned at the beginning of this section, the third pattern necessitating explanation was that the coefficients on objective disorder do not change much after adding perceptions, indicating that the two variables are operating through different channels in terms of shaping local political participation. This too is reasonable in light of several things. First, when Sampson and Raudenbush (2004) examine these relationships in multivariate models they find that after controlling for racial context, there is no association between perceptions and physical disorder and only a moderate relationship between perceptions and social disorder. In short, the link between objective and subjective disorder exists, but it is not overwhelmingly strong; these measures are each gauging something distinct. This explains how objective social disorder can effect participation separately from perceptions.

Where and how the mechanisms involved diverge is a tougher question. Given that objective social disorder only negatively impacts the likelihood of speaking to a politician (and not that of attending a meeting), I would postulate that it bears on

participation by shaping things like individuals' relationship to local authority structures, their sense of the limits of formal politics etc. This would explain how social disorder could dampen the inclination to speak to a politician but not necessarily the proclivity for engaging in more grassroots activities like attending a meeting. Contrastingly, perceptions likely operate on a broader level by guiding the overarching calculus about the costs and potential benefits of participation writ large. This elucidates why adding perceptions to the models did not alter the role of objective disorder. Thinking back to the example I gave earlier is again helpful: regardless of where my neighbor stood in terms of her perceptions of local disorder, her decision to advise fellow residents against contacting an alderman was apparently driven by a distinct mix of other attitudes (i.e. assessments of the insatiable local demand for drugs, understandings of the larger socioeconomic forces motivating drug dealers etc.). Some of these factors could be closely correlated to objective disorder (e.g. being physically proximate to drug dealers and consumers can lead one to believe that the demand for these things is high and that the sale and consumption of them is an inevitable and hardly amenable to political change). If this were the case, the channels through which objective disorder influenced political participation would lie outside of the mechanism of perceptions.

I have insufficient empirical leverage (and not enough space) for examining these conjectures more closely. Nevertheless, the findings underscore the need for political scientists to pay closer attention to the role of objective social disorder in structuring local participation. It also cautions us against discounting the meaningful distinctions between different kinds of political behavior.

Alternative Considerations and Robustness Checks

When it comes to causally interpreting this research, the usual caveats apply. While the findings are strongly suggestive, it is impossible to make unequivocal claims about cause and effect in the context of a cross-sectional observational study. However, to bolster the case for the robustness of the results, I performed additional analyses addressing several potential inferential challenges. I offer detailed discussions of three such challenges: correlated causes, reverse causality and critical interactions. As it turns out, empirical scrutiny of these possibilities does not compromise the core findings.

Correlated Causes

What if an unobserved variable causes both participation and perceptions of disorder? Omitted variable bias can never be entirely eliminated in the (non-experimental) survey research setting but attentiveness to the kinds of causes that might simultaneously account for outcomes and predictors is nevertheless warranted. Given the subject at hand, two variables stand out in this sense: collective efficacy and social disorganization. These phenomena are central to the sociological literature on contextual effects (Sampson and Groves 1989; Sampson et al. 1997; Sampson et al. 2002). Social disorganization generally refers to, "the inability of a community

structure to realize the common values of its residents and maintain effective social controls (Kornhauser 1978: 120; Sampson and Groves 1989). Collective efficacy, a related concept, lies at the positive end of the social disorganization spectrum. Namely, collective efficacy is at its height when neighbors, "get along, work through local organizations to better the community and take steps to informally control trouble in their neighborhood (Akers and Jensen 2003: 8)."

Arguably, individuals who believe that their neighborhoods have low levels of collective efficacy and/or high levels of social disorganization may also perceive more disorder. At the same time, individuals who discern a lack of efficacy or organization in their neighborhoods might be propelled to mobilize their neighbors, thus spurring the local participation that they believe is absent. The same would be true at the extreme positive end. Individuals who perceive their neighborhoods to be highly organized and efficacious will have perceive less disorder and will also have scant motivation for investing their own political energies (both because they may not see a need for doing so and because they may take advantage of the opportunity to free ride off the efforts of their organized and efficacious neighbors). In this way, collective efficacy and social disorganization could ostensibly cause both perceptions of disorder and political participation. If so, then excluding these things from the models could threaten the validity of initial findings.

To test for this, I incorporate measures of both phenomena into the originally estimated participation models. Sociologists have well-established variables to measure these concepts and I do not reinvent the wheel. Two of the most common measures of social disorganization are: 1) local friendship networks 2) unsupervised teenagers/peer groups (Sampson and Groves 1989; Veysey and Messner 1999). Collective efficacy is generally measured by creating a scale with items tapping into individuals' beliefs about: (1) neighborhood social cohesion and (2) social control (Sampson et al. 1997). The PHDCN has variables and/or scales representing each of these things.

Tables 4 and 5 contain the results. In both tables, Model 1 shows the original findings, model 2 shows the impact of adding the two social disorganization variables and Model 3 shows the results with the addition of the collective efficacy scale. For both speaking to a politician (Table 4) and attending a meeting (Table 5), disorganization and efficacy have significant associations with participation. Respondents who view their neighbors as more organized and more efficacious are more likely to take political action at the local level. This makes great intuitive sense because individuals' sense of neighborhood efficacy and organization presumably shape their ideas about the larger contexts in which local political engagement plays out and hence influence the calculus about the potential gains of participation.

The critical point with respect to the main findings is that despite the influence of efficacy and organization, adding them to the models does not eliminate the significance of perceptions. The same is true for a host of other potentially confounding variables included in various iterations of these models (including individual and neighborhood level social ties, institutional ties, perceptions of neighborhood danger, perceptions of neighborhood violence, neighborhood attachment and social capital).

Table 4 Models including social disorganization and collective efficacy (predicting speaking to a politician)

	Model 1 (initial full model)	Model 2 (initial + social disorganization)	Model 3 (initial + collective efficacy)
Individual level			
Age	.02 (.01)***	.02 (.01)***	.02 (.01)***
Education	.09 (.03)***	.10 (.03)***	.10 (.03)***
Income	.04 (.03)	.04 (.03)	.04 (.03)
Latino	−.28 (.25)	−.23 (.25)	−.21 (.25)
Black	.26 (.23)	.32 (.23)	.24 (.23)
Mobility	−.10 (.06)*	−.08 (.06)	−.09 (.06)
Home owner	.91 (.20)***	.99 (.20)***	.82 (.20)***
Perceived disorder	.06 (.03)**	.04 (.04)	.11 (.03)***
Perceive disorder (quadratic)	−.02 (.01)***	−.02 (.01)***	−.02 (.01)***
Neighborhood level			
Objective social disorder	−.52 (.24)**	−.51 (.24)**	−.47 (.24)**
Objective physical disorder	−.05 (.04)	−.06 (.04)	−.06 (.04)
Mean income	.08 (.07)	.07 (.07)	.05 (.06)
Proportion black	−.47 (.49)	−.44 (.50)	−.35 (.48)
Mean tenure length	.06 (.03)**	.06 (.03)**	.05 (.03)*
Social disorganization			
Friendship networks	–	.24 (.07)***	–
Unsupervised Teenagers	–	.07 (.06)	–
Collective efficacy scale	–	–	.50 (.11)***
Level 1 N	996	996	996
Level 2 N	74	74	74

All models based on multilevel logistic regression

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Reverse Causality

What if local political participation shapes perceptions of neighborhood disorder? Speaking to a politician or attending a meeting might change one's perceptions of the neighborhood environment. If this is the case, then the processes hypothesized above may not adequately explain the relationship between perceptions of disorder and participation. There are two reasons that I argue that the causal arrow does not flow from participation to perceptions. First, the wording of the questions for both dependent variables creates an inbuilt assumption that the causal ordering goes from perceptions to participation. Namely, respondents were asked whether they had spoken to a politician or attended a meeting *about a neighborhood problem*. This

Table 5 Models including social disorganization and collective efficacy (predicting attending a meeting)

	Model 1 (initial full model)	Model 2 (initial + social disorganization)	Model 3 (initial + collective efficacy)
Individual level			
Age	.01 (.01)	.01 (.01)	.01 (.01)
Education	.02 (.03)	.03 (.03)	.03 (.03)
Income	.05 (.03)*	.05 (.03)*	.05 (.03)*
Latino	−.37 (.25)	−.40 (.26)	−.40 (.26)
Black	−.13 (.23)	−.07 (.23)	−.17 (.23)
Mobility	−.18 (.07)***	−.15 (.06)**	−.16 (.06)***
Home owner	1.3 (.20)***	1.3 (.21)***	1.2 (.21)***
Perceived disorder	.06 (.03)**	.07 (.04)**	.26 (.03)***
Perceive disorder (quadratic)	−.00 (.01)	−.00 (.01)	−.01 (.01)
Neighborhood level			
Objective social disorder	.14 (.19)	.16 (.20)	.24 (.20)
Objective physical disorder	−.05 (.04)	−.07 (.04)*	−.07 (.04)
Mean income	.19 (.07)***	.19 (.07)**	.16 (.07)**
Proportion black	.69 (.49)	.73 (.50)	.73 (.50)
Mean tenure length	−.11 (.08)	−.03 (.03)	−.04 (.03)
Social disorganization			
Friendship networks	–	.36 (.07)***	–
Unsupervised teenagers	–	−.00 (.05)	–
Collective efficacy scale	–	–	.62 (.12)***
Level 1 N	990	990	990
Level 2 N	74	74	74

All models based on multilevel logistic regression

***$p \leq .01$

** $p \leq .05$

* $p \leq .10$

means that the initial motivation of the participation was constrained to being related to neighborhood perceptions and thus, that perceptions were causally prior.

Second, while evidence exists linking local participation to perceptions of neighborhood satisfaction, there is no research indicating a relationship between local participation and perceptions of disorder (Taylor 2001). The distinction between these two (perceptions of satisfaction versus perceptions of disorder) is of the utmost importance here. Since perceptions of satisfaction tap into diverse aspects of the neighborhood experience, they could ostensibly be shaped by virtually any neighborhood related phenomenon (including local participation). Contrastingly, perceptions of disorder are more limited, especially as they are measured in the PHDCN data. It is easier to understand why an encounter with one's neighbors at a community meeting could shape broad feelings of residential satisfaction than to understand why it would

more specifically alter one's ideas about whether litter, vacant housing, drinking in public or selling drugs are big problems in the neighborhood.

Taking this logic a bit further, it is instructive to envisage the mechanisms that might form a link *from* participation *to* perceptions of disorder, as doing so gives us empirical leverage for assessing the feasibility of reverse causation.[17] One potential mechanism of participation involves the evaluations of one's neighbors or neighborhood that develops as a result of either attending a meeting or speaking to a politician. If participation in these activities were shaping perceptions of disorder, then prevailing research indicates that they would be doing so by altering things such as: trust in neighbors, perceptions of whether neighbors have different values, perceptions of neighborhood close knittedness and perceptions of whether local authorities were responsive to community needs. For example, Putnam (2000) argued that participation in local community organizations creates social cohesion among neighbors and Dassopoulos and Monnat (2011) found that such cohesion mediates the impact of participation on perceptions of neighborhood satisfaction. Following such findings, we might posit that the risk for reverse causation lies in the propensity for local participation to influence factors related to how people evaluate their neighbors and neighborhoods (and thus to also affect perceptions of disorder). It further follows that if endogeneity is driving the previously presented results, then controlling for the channels through which it might operate should eliminate the relationship between perceptions of disorder and participation. As the models presented in Table 6 show, no such thing happens. While circumstantial, this is modest evidence against reverse causation: even after accounting for a wide spectrum of the mechanisms through which participation could bear upon perceptions of disorder-the relationship between the two holds fast.

Critical Interactions

What if the relationship between political participation and neighborhood perceptions varies systematically by class (or some other factor)? That is, what if people who are wealthier have a different political response to perceptions of disorder than those who are less privileged? Under such circumstances, the initial findings offered in this paper could at least partially reflect unaccounted for interactions between income and perceptions and thus misestimate the direct effect of perceptions.

In a preliminary test for this, I perform basic *t* tests to determine whether mean perceptions of disorder differ significantly between low (less than 25 K), middle (25–60 K) and high (over 60 K) income groups. As it turns out, they do.

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[17] As a more direct test than this, I initially estimated Two Staged Probit Least Squares (2SPLS) models. 2SPLS is a procedure for estimating non-recursive models when one of the endogenous variables of interest is dichotomous (Keshk 2003; Alvarez and Glasgow 2000). The results were partially in favor of the core findings of the article: perceptions of disorder remained significant when the outcome was attending a meeting, even in a recursive setting. However, this did not hold for the other dependent variable (speaking to a politician). More generally, the 2SPLS results were questionable (in particular, they were highly sensitive to model specification). This is likely exacerbated by the multilevel and non-linear nature of the analysis, which the 2SPLS models I ran were not designed to account for. Given the uncertainty of these findings, I refrain from using them as evidence for or against reverse causality.

Table 6 Models including potential mechanisms for reverse causation

	Speaking to politician	Attending meeting
Individual level		
Age	.02 (.01)**	.01 (.01)
Education	.07 (.04)**	.03 (.04)
Income	.04 (.03)	.05 (.03)
Latino	−.32 (.28)	−.40 (.28)
Black	.35 (.25)	−.11 (.25)
Mobility	−.11 (.07)*	−.19 (.07)***
Home owner	.81 (.22)***	1.2 (.23)***
Perceived disorder	.08 (.03)**	.12 (.03)***
Perceive disorder (quadratic)	−.02 (.01)***	−.01 (.01)
Potential mechanisms for reverse causation		
Close knit neighborhood	.20 (.09)**	.12 (.09)
Trust neighbors	.16 (.11)	.26 (.12)***
Neighbors have different values	−.09 (.09)	.07 (.09)
Police responsive to local issues	.09 (.10)	.06 (.10)
Neighborhood level		
Objective social disorder	−.59 (.26)**	.16 (.21)
Objective physical disorder	−.06 (.04)	−.06 (.05)
Mean income	.04 (.07)	.16 (.08)**
Proportion black	−.77 (.53)	.51 (.55)
Mean tenure length	.06 (.03)**	−.04 (.03)
Level 1 N	784	781
Level 2 N	73	73

All models based on multilevel logistic regression

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

To determine whether adjusting for these patterns changes anything, I re-reran the analyses for each outcome, estimating three separate models, each of which included interactions between perceptions and one of three income dummy variables (low, middle or high). I draw on these results to tell me whether the perceptions-participation slope varies based on the particular income group a respondent belongs to.

The results (not shown) reveal no such change. This means that whether one is low-income, middle-income or high-income, the relationship between perceptions and participation remains significant: curvilinear for speaking to a politician, linear for attending a meeting.[18]

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[18] In addition, the results dis not change when I ran models that simply added a basic interaction between income and perceptions (as opposed to splitting the interactions up based on income category and running separate models).

I also checked for interactions between perceptions and education, perceptions and race and perceptions and objective disorder. None of these were significant and none of them weakened the relationship between perceptions and participation. Omitted interaction terms do not appear to be distorting the findings.

Broader Implications

The results detailed throughout this article paint a complex but illuminating picture of the role of both objective contextual disorder and subjective perceptions of disorder in shaping individuals' local political engagement. Laying the groundwork in partial support of (H2), it turns out that certain kinds of objective disorder seem to bear on certain kinds of political action: increased levels of objective *social* disorder (i.e. that which directly reflects the behavior of people) are associated with a decreased likelihood of going though formal political channels (speaking to a politician) in an attempt to solve neighborhood problems. So, while actual broken windows don't have much direct political significance, the socially based inclivities that are part and parcel of Wilson and Kellings' theory of broken windows do figure into political decision-making processes.

Even more critical and much in line with my expectations for the other hypothesis under examination (H1): perceptions of disorder are directly, significantly and strongly associated with political participation. Neighborhood residents who sense more disorder are more likely to be politically responsive. Moreover, for speaking to a politician, this association is non-linear; the trend levels off and descends for people with extreme perceptions. So, neighborhood residents who are either most or least aware of disorder are decreasingly likely to take this kind of formal political action. A neighborhood is most conducive to political engagement when its residents' perceptions of disorder are severe enough to warrant political response, although in some cases too much severity may induce hopelessness.

This article furthers both scholarly and practical ends by advancing our understanding of the relationship between neighborhood disorder (both objective and subjective) and local political participation. In terms of the former, researchers have too often attempted to gauge the political implications of neighborhoods without accounting for disorder: either the concrete sights or sounds of the neighborhood experience (objective) or the particular ways people perceive them (subjective). This oversight fuels a larger disconnect between mainstream political science and the realities of lived experience (Piven and Cloward 1977; Scott 1990; Peterson 1990; Hardy-Fanta 1993). By focusing on a crucial local institution (the neighborhood) and basing the analysis of that institution on the, "substance of people's daily lives," I offer a nuanced and textured approach to modeling contextual effects on political behavior (Verba et al. 1995: 279).

In terms of practical upshots, this work bespeaks the need to remain attentive to the democratic implications of neighborhood improvement and other local policy efforts. It is a widely accepted tenet that local political participation can produce many benefits including improving the quality of the physical environment, preventing crime and promoting more effective urban service delivery (Rich 1979;

Curtis 1987; Churchman 1987; Florin 1989; Marschall 2004). Given the consequences of citizen involvement, it is vital that we delineate the processes that engender it. Yet, amid contentious debates about how to best solve the problems associated with "broken windows," there is little (if any) discussion of the participatory ramifications of disorder. This work brings empirical findings to bear on these matters. With respect the direct effect of actual broken windows (e.g. objective physical disorder) on participation, I offer evidence that it is negligible. However, objective disorder does matter in terms of its social manifestations, so keeping this kind of disorder at the forefront of the policy agenda is likely to be better for the political strength of a neighborhood than simply trying to "clean up" blight in the physical sense.

In addition, given the differences in the determinants of attending meetings and speaking to a politician and the more daunting challenges associated with fostering the latter, community institutions seeking to bolster participation might benefit from working to widen the scope of local engagement by promoting access to political representatives through the same social and organizational networks that sustain attendance to local meetings. The same is true for local political representatives, who can cultivate greater community participation by connecting those who reach out to them to wider organizational circles.

Having said all that, the more compelling value of this research may lie in demonstrating that perceptions of disorder directly influence local participation. Turning to perceptions when evaluating policy responses to neighborhood disorder has potentially far reaching repercussions. It means we must consider the participatory implications of things like more aggressive policing strategies and gentrification policies—deliberating not only about the tangible results of such policies but also (given what we know about the determinants of perceptions of disorder) about the ways they may shape residents' interpretations of disorder.

Previous research clarifies that perceptions of disorder are not just a function of reality but are instead largely socially constructed and strongly connected to social psychological mechanisms such as implicit racial and class bias (Sampson and Raudenbush 2004; Franzini et al. 2008). Since perceptions, "clearly matter for reasons that extend far beyond the mere presence of broken windows," it is to perceptions that we must turn to identify pathways for facilitating local political participation (Sampson and Raudenbush 2004: 337). In this light, policies addressing pressing social inequalities are of primary importance. For example, knowing that racial composition matters for how people perceive neighborhood disorder, policymakers might pay special attention to housing and education policies meant to address racial segregation, with a particular eye towards the potential for such patterns to stymie urban political life.

Local participation is a cornerstone of democratic politics. This article shows that neighborhood disorder matters for such politics. The degree to which people perceive graffiti, litter and other signs of disorder as neighborhood problems impacts their local political responsiveness. This information, combined with broader understandings of what shapes perceptions of disorder, lays the foundation for structuring policy in ways that facilitate grassroots activism—a vital component of the American democratic process.

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