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“SEEING” MINORITIES AND PERCEPTIONS OF DISORDER:
EXPLICATING THE MEDIATING AND MODERATING MECHANISMS OF SOCIAL
COHESION

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ABSTRACT

Research shows that residents report high levels of disorder in places with greater concentrations of minorities even after controlling for objective indicators of crime or disorder. Less understood, however, are the mechanisms that explain this relationship. Drawing on a survey of nearly 10,000 residents nested within 297 neighborhoods across two cities, we use a multiple indicators multiple causes model to examine the cues that lead individuals to distort the presence of minorities in neighborhoods. We then employ multi-level models to assess how these distortions influence perceptions of disorder. Further, we assess if living in a socially cohesive neighborhood mediates and/or moderates the relationship between “seeing” minorities and perceiving disorder. We find that when residents overestimate the proportion of minorities living in their neighborhood, perceptions of disorder are heightened. Yet social cohesion moderates and partially mediates this relationship: residents living in socially cohesive neighborhoods not only report less disorder than those living in less cohesive communities; they “see” fewer minorities when compared to residents living in less socially cohesive neighborhoods. These results suggest that social cohesion is an important mechanism for explaining how residents internalize the presence of minorities in their neighborhoods and how this then leads to perceived neighborhood disorder.

INTRODUCTION

Over thirty years ago, Wilson and Kelling (1982) introduced the metaphor of “broken windows” to describe how signs of social and physical disorder can lead to subsequent escalations in more serious predatory crime (Wilson and Kelling, 1982). From this perspective, the presence of disorder signals to potential offenders that an area is vulnerable and triggers the exodus of residents and businesses out of troubled neighborhoods (Skogan, 1990). As Skogan (1990) argues, disorder is the starting point of a spiral of neighborhood decline that reduces the capacity of remaining businesses and residents to engage in informal regulation of their neighborhood (see also Steenbeek and Hipp, 2011).

In criminology, studies of disorder are typically concerned with objective social and physical neighborhood problems (Bursik and Gasmick, 1993; Sampson and Raudenbush, 1999; Skogan, 1990; Taylor, 2001; Wilson and Kelling, 1982), or what Sampson calls the “tangible manifestations of disorder” (Sampson, 2009:7). These include the presence of abandoned buildings, graffiti or disorderly public behavior. Though these problems represent relatively low level breaches of the law, Sampson and Raudenbush (1999) contend that they share a similar etiology with more serious crime. For example, perceived disorder, like violence more broadly, is higher in neighborhoods characterized by concentrated disadvantage and residential instability (Skogan, 1990; Steenbeek and Hipp, 2011; Taylor, 1995) and lower in areas where residents share common values and work together to solve local problems (Markowitz et al., 2001; Sampson and Raudenbush, 1999).

The minority composition of the neighborhood is also associated with both perceived disorder and more serious crime (Franzini et al., 2007; Hipp, 2007; Laurence, 2011; Letki, 2008; Mohan, Twigg and Taylor, 2011; Permentier, Bolt and van Ham, 2011; Sampson and Raudenbush, 2004; Sampson, Raudenbush and Earls, 1997; Taylor, Twigg and Mohan,

2010). Yet, what is interesting, and forms the focus of our paper, is that the relationship between the minority composition of a given area and residents' perceptions of disorder is not reducible to objective measurements of crime and disorder in the neighborhood. As Sampson and Raudenbush (2004) and later Sampson (2009) argues, "seeing" disorder is, at least in part, influenced by enduring biases that associate particular minorities with criminality.

In previous research, racial or ethnic determinants of disorder are viewed as a linear function of the size of particular minority groups residing in the neighborhood. That is, assessments of neighborhood disorder are higher in places with more minorities. Yet Chiricos and his colleagues (2001) argue that it is the *perception* of the neighborhood composition rather than the actual presence of minorities that matters most for perceiving neighborhood problems. They contend that "the racial composition of a place can only be consequential for social control if human actors situated in these social circumstances are aware of the racial composition, concerned about it and respond in ways that mobilize control initiatives" (Chiricos McEntire and Gertz, 2001: 323). This suggests that the minority composition of a neighborhood is only salient in places where residents perceive a greater social distance between the majority and the minority population.

Our paper directly tests the relationship between what people "see" in terms of the minority presence in their neighborhood and their perceptions of disorder. We examine whether or not residents' perceptions of the minority composition of their neighborhood distorts their perceptions of disorder. Yet rather than relying solely respondents' estimates of the neighborhood racial and ethnic composition (see Chiricos, McEntire and Gertz, 2001; Pickett, Chiricos, Golden and Gertz, 2012), we simultaneously consider multiple measures that might be cues for the presence of racial and ethnic minorities in a neighborhood and the respondents' tendency to over or underestimate the neighborhood's minority composition. Drawing on the social distance literature (see Hipp and Perrin, 2009; Mayhew et al., 1995),

we hypothesize that particular cues of racial or ethnic difference will lead some residents to overestimate a neighborhood's minority composition and that these distorted, overestimated views will lead to heightened perceptions of disorder. Additionally, and in line with Chiricos McEntire and Gertz (2001: 323), we analyze the relationship between neighborhood mechanisms that may reduce "social control initiatives" and thus influence residents' perceptions of disorder. Here we focus on social cohesion. Many studies indicate that the minority composition of the neighborhood can attenuate social cohesion (Alesina and La Ferrara, 2000, 2002; Costa and Khan, 2003; Gijsberts, van der Meer and Dagevos, 2011; Lancee and Dronkers, 2008; Stolle, Soroka and Johnston, 2008) and reduce informal social control (Sampson, Raudenbush and Earls, 1997; Steenbeek and Hipp, 2011). Thus we assess whether or not living in a socially cohesive neighborhood mediates, and/or moderates, the relationship between residents' estimates of the proportion of minorities living in their neighborhood and perceptions of disorder.

In this paper we integrate crime, census and survey data of nearly 10,000 residents living in 297 communities in two cities in Australia to extend the literature in three ways. First we develop two innovative measures to better understand the subjective nature of disorder. The first is a latent neighborhood construct that simultaneously considers the objective indicators of racial and ethnic difference in a neighborhood and respondents' own perceptions of the neighborhood's minority composition. This neighborhood level construct encapsulates neighborhood cues that might imply greater social distance between minority and majority groups. We then use this measure (which we describe in detail in our methods section) to construct an individual-level measure that captures a resident's propensity to "see" a greater, or indeed lesser, minority presence than what actually exists. This allows us to account for an individual's intrinsic (but largely unmeasurable) internal bias. Next we use these measures in our analyses to examine whether or not residents' distorted perceptions of

minority presence in the neighborhood lead to heightened perceptions of disorder. Finally, we consider a) whether social cohesion mediates the relationship between the measure of distorted perceptions of minority presence in the neighborhood and perceptions of disorder, and b) whether living in a socially cohesive neighborhood moderates this relationship.

We begin our paper with a review of the relevant extant literature. We then discuss our data and analytic approach. Our results show that social cohesion moderates and partially mediates this relationship: residents living in socially cohesive neighborhoods not only report less disorder than those living in less cohesive communities, but they also “see” fewer minorities when compared to residents living in less socially cohesive neighborhoods. These results suggest that social cohesion is an important intervening mechanism for explaining how residents internalize the presence of minorities in their neighborhoods and how this then leads to perceptions of neighborhood disorder.

LITERATURE REVIEW

SUBJECTIVE PERCEPTIONS OF NEIGHBORHOOD DISORDER

The Ecology of Crime literature is replete with studies that utilize resident assessments of the neighbourhood’s social and physical disorder to better understand the relationship between perceived disorder and fear of crime (see LaGrange, Ferraro and Supancic, 1992; McCrea et al., 2005; Ross and Jang, 2000), victimization risk (see Kanan and Pruitt, 2002; Mellgren, Pauwels and Torstensson Levander, 2010) and the incidence of more serious crime (see Skogan, 1990; 2008; Wilson and Kelling, 1982). Yet, as scholars note, residents’ perceptions of disorder are subjective and strongly influenced by a

neighborhood's socio-demographic composition (Franzini et al., 2007; Quillian and Pager, 2001; Sampson, 2009; Sampson and Raudenbush, 1999; Sampson and Raudenbush 2004; Taylor, 2001). Specifically, residents' perceptions of disorder are racially and spatially bound, shaped by the neighborhood context and extending beyond visible signs of disorder and decay or official reports of crime (Franzini, et al., 2007; Sampson and Raudenbush, 2004).

This relationship is clearly demonstrated in Sampson and Raudenbush's (2004) study of Chicago neighborhoods. Drawing on census data, systematic observations and resident interviews, they (2004) find that residents' perceptions of disorder are not solely the result of objective indicators of social problems. Residents living in predominantly black neighborhoods perceive more disorder than those living in predominantly white neighborhoods even after controlling for the presence of observable cues of disorder (see Sampson and Raudenbush, 2004). Moreover, blacks and whites do not statistically differ in their perceptions of disorder when living in predominantly black neighborhoods. Even for black residents, the negative association between the proportion of blacks and perceptions of disorder holds (Sampson and Raudenbush, 2004). Sampson and Raudenbush (2004) therefore conclude that perceptions of disorder are strongly influenced by the mere presence of the minority population in the neighborhood and driven by "implicit biases" about particular groups and crime (Sampson and Raudenbush, 2004: 337).

Unlike stereotypes, which represent either positive or negative mental associations between a social group or category and a given trait, implicit biases occur when attitudes, attributions or stereotypes compromise the accuracy and fairness of judgments (Greenwald and Hamilton Krieger, 2006). Implicit biases operate without intention or conscious awareness (Rudman, 2004) and are the result of personal observations that occur in the everyday social context. They are highly pervasive in society and predictive of discriminatory

behavior (Greenwald and Hamilton Krieger, 2006). Some suggest that implicit biases are evoked by intergroup anxiety that can occur from interactions with members of other racial groups or the mere anticipation of an “other-race” encounter (Greenland and Brown, 1999; see also Payne, 2001). These implicit biases quite possibly reinforce disadvantage and disinvestment in neighborhoods such that racial, ethnic and class compositions of an area become aligned with particular “kinds” of places, inhabited by certain “types” of people (Sampson, 2009; Sampson and Raudenbush, 2004; Wacquant, 2010). Sampson and Raudenbush (2004) argue that these implicit biases encourage residents to supplement what they “see” with preconceived beliefs about people and places.

SOCIAL DISTANCE: CUES THAT INFLUENCE PERCEPTIONS OF MINORITY PRESENCE

Central to the implicit bias perspective is the association that people make between the presence of minorities in a neighborhood and their understanding of crime and disorder (Quillian and Pager, 2001; Sampson, 2009; Sampson and Raudenbush, 2004). Yet as Chiricos and his colleagues’ (2001) note, residents’ *perceptions* of minority presence, not the objective minority composition of the neighborhood, are more likely to lead to biased associations. For example, Chiricos, Hogan and Gertz (1997) find that perceptual measures of the neighborhood composition are more consequential for fear of crime when compared to the actual proportion of a particular minority group residing in the area. Similarly Skogan (1995) notes that white residents who believe they live close to black residents report higher levels of fear than those living further away. Further, residents who report more blacks and Hispanics living in their neighborhood believe they are at greater risk of being a victim of crime (Chiricos, McEntire and Gertz, 2001).

These studies show a strong association between overestimating the presence of minorities and elevated reports of fear of crime or victimization risk. Yet they do not fully capture respondents' overestimates of the neighborhood minority presence. In all studies, participants are asked to estimate the percent of non-white residents living in the neighborhood, however, this does not necessarily infer bias. In some neighborhoods there actually are more non-whites than whites and residents estimates of minority presence may simply represent the actual conditions of the neighborhood. Additionally, these studies only consider the racial composition of the neighborhood. We argue that there are other cues of "difference" that lead residents to overestimate the presence of minorities. The social distance literature offers insight as to how features of a neighborhood might influence resident estimates of the proportion of minority presence. This is particularly applicable in multi-ethnic settings, like Australia and Europe, where perceptions of minority presence are not only driven by skin color but also by other displays of cultural difference.

Although there are various definitions of social distance, the one we focus on here is defined as the degree of perceived difference between one's own group and members of another group (Bogardus, 1947; Payne, York, and Fagan, 1974; Siegel and Shepherd, 1959)¹. Three indicators of social distance identified in the literature are particularly useful here. First, as we note earlier, skin color, or the ethnic/racial ancestry of group members, can be used as a cue of the social distance between oneself and others that are different. For example, the degree of inter-marriage among different groups may be a useful indicator of social distance - those groups with low levels of inter-marriage likely experience greater social distance than those groups with higher levels of inter-marriage (Alba and Golden, 1986; Alba and Kessler, 1979; McCaa, 1989; Pagnini and Morgan, 1990).

A second social distance cue is language. Speaking a different language from English in a primarily English-speaking country can, for example, result in social distance within

neighborhoods as it may hinder communication (Leigh, 2006). It is also possible that speaking a language other than the official national language can signal “difference” as language is strongly tied up with ethnicity (Anderson, 1991) and nationhood (Calhoun, 1992). Thus some languages may foster a greater sense of social distance than others to the extent that they are perceived as foreign to native ears. As Sniderman and Hagendoorn (2007) note, language can be viewed as a source of cultural threat in some contexts.

A third cue that can influence perceptions of minority presence is religious differences. Goldberg (2006) argues that in the European context, religious differences are a major trigger of prejudice and bias. Using data from the European Social Survey, Hjerm and Nagayoshi (2011) find that increases in Muslim population are strongly related to xenophobic attitudes. From this we suggest that in neighborhoods with higher proportions of residents aligning with non-Western religions like Islam, Judaism or Hindu, social distance between the minority and majority population may be heightened.

SOCIAL COHESION

The social distance perspective is useful for explaining how particular neighborhood cues of difference might encourage some residents to perceive higher concentrations of minorities in their residential area than what actually exists. Yet social distance may not be the only mechanism associated with perceptions of disorder. Neighborhood social cohesion may also influence the relationship between minority presence and disorder.

For many scholars, social cohesion is considered an important mechanism for network development and group functioning (Coleman, 1988; Putnam, 2000). While there is no agreed definition of social cohesion, it is commonly understood as a pro-social good that represents a sense of belonging and attachment and brings about positive outcomes for the

collective (Markus and Dharmalingam, 2009). In essence it symbolizes a working trust and a general willingness of residents to work together (Sampson, Morenoff and Gannon-Rowley, 2002).

Criminology has long recognized the importance of social cohesion to the maintenance of social order in urban neighborhoods. Social disorganization theory and its contemporary reformulation, collective efficacy, posit that the level of social cohesion is particularly important in mediating particular structural characteristics, like the racial and ethnic composition of the neighborhood, on levels of crime (Bursik and Grasmick, 1993; Kubrin and Weitzer, 2003; Morenoff, Sampson and Raudenbush, 2001; Sampson and Groves, 1989; Sampson, Raudenbush and Earls, 1997; Taylor, 2002). Scholars contend that when a community is unable to realize common values and enforce internal social control, crime will increase (Bursik, 1988; Sampson, Raudenbush and Earls, 1997). Longitudinal studies also show that social cohesion can mediate the relationship between ethnic heterogeneity and informal social control (Steenbeek and Hipp, 2011).

More broadly, levels of social cohesion in a given neighborhood, city, state or even country are strongly influenced by the racial and ethnic composition (Lancee and Dronkers, 2011; Putnam, 2007; Stolle, Soroka and Johnston, 2008; Sturgis et al., 2010; Walker and Hewstone, 2008). For example, Putnam's (2007) research indicates that the presence of particular minority groups reduces "*both* ingroup *and* outgroup solidarity" (Putnam, 2007: 144, emphasis in original) and encourages social withdrawal or "hunkering". In Australia, Wickes and colleagues (in press) find support for this thesis: Residents of linguistically diverse neighborhoods or neighborhoods with high proportions of Indigenous residents report lower levels of social cohesion and exchange with neighbors. All of these considerations suggest that social cohesion may *mediate* the relationship between residents' perceptions of the proportion of minorities in the neighborhood and perceived disorder.

It is also possible that social cohesion can *moderate* the relationship between residents' distorted estimates of minority presence and perceived disorder. Seeing a group as "different" does not automatically lead to implicit biases. For example, in some neighborhoods the presence of minority groups may indicate that a community is multi-cultural and edgy. In others, minority groups may be seen as a threat to valued resources (Blalock, 1967; Quillian, 1995). We suggest the impact of social distance on residents' over or underestimates of neighborhood minority presence on perceived disorder will only be consequential in neighborhoods where residents do not share values and a group identity (cf. Hipp and Perrin, 2009). Thus a socially cohesive environment is likely to moderate the relationship between "seeing" minorities and perceiving disorder. Socially cohesive neighborhoods may provide the necessary levels of trust to circumvent this process.

Socially cohesive neighborhoods may mitigate the effects of residents' distortions of the racial and ethnic composition of the neighborhood and lessen the minority-disorder association. This implies that in socially cohesive neighborhoods residents who perceive more social distance between the majority and minority group may not necessarily report more disorder. In such neighborhoods, residents may incorrectly estimate the number of minorities living nearby because of a more general cognitive error (see Alba, Nee and Nee, 2005; Nadeau, Niemi and Levine, 1993; Wong, 2007), rather than perceived social distance or implicit biases. Some research supports this assertion. In a study of well-being, Cutrona and her colleagues (2000) found that for African American women neighborhood social cohesion strongly moderated the relationship between experiencing distress and reporting a positive outlook. They argued that "high neighborhood cohesion appears to play a facilitation role for some women, intensifying the benefits of positive outlook on psychological wellbeing" (Cutrona et al., 2000:1096). Thus residents' over or underestimates of the presence of minorities in their neighborhood and disorder may be influenced by levels

of neighborhood social cohesion - in neighborhoods with high levels of social cohesion, over or underestimating the minority population will not influence perceptions of disorder. Conversely, over or underestimating the minority population will be consequential for perceptions of disorder in neighborhoods with low social cohesion.

EXPLICATING THE LINK BETWEEN “SEEING” MINORITIES AND PERCEIVING DISORDER

The goal of the present research is two-fold. First, to examine whether or not residents’ distorted estimates of the neighborhood minority presence are associated with their perceptions of disorder and second, to assess whether or not living in a socially cohesive neighborhood mediates and moderates this association. Drawing on the social distance literature, we argue that the relationship between residents’ over (or under) estimates of the proportion of minorities and their perceptions of disorder centers on implicit biases associated with particular minority groups. Thus in some neighborhoods the cues that indicate a minority presence will lead to greater perceived social distance between majority and minority group members. We argue that this mechanism operates at the level of individuals, as some persons will be biased toward perceiving more minority residents than what actually exists (see also Sampson, 2009; Sampson and Raudenbush, 2004) and will therefore report more disorder. This leads us to our first hypothesis:

H1: Residents that overestimate the minority presence in the neighborhood will perceive more disorder than those who underestimate the presence of minorities.

Yet neighborhood protective mechanisms may mediate this relationship. We know that residents living in socially cohesive neighborhoods report less disorder than residents

living in less cohesive neighborhoods (Markowitz et al., 2001; Steenbeek and Hipp, 2011). In neighborhoods where residents overestimate the level of minority presence, the development of shared values and a collective identity may be attenuated. This could then lead to heightened assessments of neighborhood disorder. This leads us to our second hypothesis:

H2: Overestimating the presence of minorities in the neighborhood decreases neighborhood social cohesion which in turn increases perceptions of disorder.

There is also some evidence that social cohesion can have a moderating effect on attitudes and perceptions (Cutrona et al., 2000). Thus the relationship between “seeing” minorities and perceiving disorder may be moderated by social cohesion. Socially cohesive neighborhoods may provide the necessary levels of trust needed to break down the posited effects of social distance (which we argue leads to perceiving more minority residents than what actually exists). Residents living in these socially cohesive neighborhoods may be less likely to overestimate the levels of minority presence and consequently perceive less disorder. This leads us to our final hypothesis:

H3: The relationship between “seeing” minorities and perceiving disorder will be weaker for residents living in more socially cohesive neighborhoods than for those living in less socially cohesive neighborhoods.

METHOD

THE AUSTRALIAN COMMUNITY CAPACITY STUDY

This paper draws on survey data from the Australian Community Capacity Study (ACCS). The ACCS is a longitudinal panel study of urban communities in Australia that is supported by Australia Research Council funding (Mazerolle et al., 2007; Mazerolle et al., 2012; Wickes et al., 2011). The overarching goal of the ACCS is to understand and analyze the key social processes associated with the spatial variation of crime and disorder across urban communities over time. The current study employs data collected in 2010 representing the third wave of the ACCS in the Brisbane Statistical Division (BSD) located in Queensland and the first wave of the Major Statistical Region of Melbourne (MSRM) located in Victoria. The Brisbane ACCS sample comprises 148 randomly drawn neighborhoods² with a residential population ranging from 245 to 20,999 (total neighborhoods in the BSD = 429 with a residential population ranging from 15 to 21,001). Many of these neighborhoods comprise residents from Indigenous and immigrant backgrounds. The Melbourne ACCS sample comprises 149 randomly selected neighborhoods with population ranging from 519 to 18,842 (total neighborhoods in the MSRM = 502 with a residential population ranging from 0 to 45,950). Like Brisbane, these neighborhoods also comprise residents from Indigenous and immigrant backgrounds. Further information on Brisbane and Melbourne follow.

The Research Sites

The ACCS sites provide an interesting contrast when considering the relationship between residents' perceptions of minority presence and perceived disorder. For example Brisbane is the state capital of Queensland and the third largest city in Australia with a population of approximately 1.9 million people. It has one of the largest metropolitan Indigenous populations in Australia and its immigrant composition has been shaped by two distinct post-war immigration waves. The first wave occurred between 1950 and the early 1970s and comprised persons originating mainly from English-speaking countries (Hugo,

1995), with relatively stable populations of immigrants arriving between 1954 (12 percent) and 1976 (13.1 percent). In the late 1980s Queensland experienced a second influx of immigrants (increasing to 15 percent of the population) with 5.8 percent of Queenslanders speaking a language other than English at home. Although immigrants predominantly came from English-speaking countries during this time, there was nonetheless a significant increase in arrivals from South and East Asia. In recent years, the immigrant population of Queensland broadly, and Brisbane specifically, has steadily increased and diversified. In 2006, 28 percent of the Brisbane population was born overseas and nearly 13 percent spoke a language other than English at home.

Melbourne is the state capital of Victoria and the second largest city in Australia, with a population of over 3.5 million. In contrast to Brisbane, it has a small Indigenous population (only 0.6 percent of the state's population) (Australian Bureau of Statistics, 2007), but is a dominant settlement point for immigrants. Between 1947 and 1954 the proportion of the Victorian population born overseas almost doubled, increasing from 8.7 to 15 percent and by 1976 immigrants comprised 22.5 percent of the state population. Originating for the most part from Southern and Eastern Europe, immigrants arriving in this first wave had an enormous impact on Melbourne's cultural and social landscape (Birrell, 2010). By 1971 almost half of all Greek-born persons living in Australia were residing in Melbourne, as were 37 percent of all Italian-born and 32.5 percent of those born in former Yugoslavia. More than half of the persons contributing to this post-war immigration influx were from a non-English speaking background (NESB) (Birrell, 2010). Melbourne was a crucial locus for NESB immigrants entering Australia during the postwar period who, due to prevailing prejudicial attitudes, were forced to build their own "ethnic" communities with distinctive food, language and lifestyles, many of which continue to thrive. A second wave of immigration, occurring in the late 1980s, saw an increase in arrivals originating from India, China, Singapore and Hong Kong

(Birrell, 2010). Whilst the relative size of the immigrant population of Victoria remained fairly stable during this time, the country of origin started to diversify. By 2006, Chinese languages had become the most common language other than English spoken at home, overtaking Italian (the most commonly reported NESB since 1947). At the 2006 census, nearly 30 percent of the Melbourne's population was born overseas and more than 20 percent spoke a language other than English at home (Australian Bureau of Statistics, 2006).

The ACCS Survey Participants

The Brisbane and Melbourne samples comprise 4404 and 4943 participants respectively. In Brisbane the ACCS survey has been collected across three waves in 2005, 2008 and 2010. The participant sample for Brisbane comprises a longitudinal sample and a top-up sample. As there is attrition in the longitudinal sample, to maintain econometrically valid indicators of social processes (Raudenbush and Sampson, 1999), a top up sample is generated at each wave for Brisbane. The number of residents needed to maintain econometric reliability was assessed using power analyses from Optimal Design Software for multi-level samples. The participant sample for Brisbane employed in this study comprises respondents from the two previous waves (N = 2248) and a randomly selected top-up sample (N = 2156). The participant sample for Melbourne employed in this study comprises respondents from only one wave of survey data collection.

Participants in Brisbane and Melbourne were randomly selected (using random digit dialing) and the overall consent and completion rate for the total sample was 50.14 percent (Brisbane ACCS = 68.52 percent; Melbourne = 40.91 percent) (for further information see Mazerolle et al., 2012). This rate represents the number of interviews completed proportional to the number of in-scope contacts.

For both Brisbane and Melbourne, the ACCS survey was conducted from 25 August to 15 December 2010 by the Institute for Social Science Research at the University of Queensland. Trained interviewers used computer-assisted telephone interviewing to administer the survey which lasted approximately 24 minutes. The in-scope survey population comprised all people aged 18 years or over who were usually resident in private dwellings with telephones in the selected neighborhoods.

Administrative data

In our analyses we control for a range of neighborhood socio-structural characteristics as well as prior crime rates. Thus in addition to the ACCS survey data, we use census data from the Australian Bureau of Statistics (ABS) and police incident data from the Queensland Police Service and Victoria Police. These measures are described in further detail below.

ANALYTIC APPROACH

Stage One: Developing a latent construct that estimates the perceived minority presence in a neighborhood

In the first stage of our analysis, we constructed a latent construct that could a) capture the perceived and objective minority presence in the neighborhood; and b) be used to assess the extent to which residents distort the minority presence in a neighborhood. We considered various approaches for constructing a measure that could capture residents' distortion of minority concentrations in a neighborhood. One approach would simply utilize survey responses asking residents to estimate the percent non-Anglo Saxon³ in the neighborhood as has been done in previous studies (Chiricos, Hogan and Gertz, 1997;

Chiricos, McEntire and Gertz, 2001; Skogan, 1995). The problem with this approach is that in some neighborhoods there actually are more non-Anglo Saxons than Anglo Saxons, so the response would not necessarily capture bias, but simply represent the actual conditions of the neighborhood.

A second approach that we considered to account for the minority presence in the neighborhood would compute the mean response of residents in the neighborhood to the survey question of the percent non-Anglo Saxon, and then subtract this from any given resident's response. This would provide the difference in the respondent's assessment of percent non-Anglo Saxon with that of the average respondent in the neighborhood. The problem with this approach, however, is that it assumes that the average response of residents in a neighborhood is an accurate representation of the percent non-Anglo Saxon in the neighborhood. This is a strong assumption that is almost certainly incorrect in many instances.

A third approach, and the one we adopt here, adjusts the respondent's estimate of the percent non-Anglo Saxon in the neighborhood by subtracting from it an assessment of the neighborhood based on a latent variable from a multiple indicators multiple causes (MIMIC) model (Bollen, 1989: 319-323). While this is a well-known approach in the literature (Arguea and Hsiao, 2000), it has not been applied before in studies of disorder. With this approach, we can conceive of a latent variable capturing resident estimates of the minority presence in the neighborhood, which has multiple indicators and multiple causes (see Figure 1). The *multiple indicators* (in Figure 1, these are the y_1 through y_I variables that are caused by the latent variable) are the responses of each of the I residents in the neighborhood to the question regarding their perception of the percent non-Anglo Saxon in the neighborhood. Thus, in our multilevel models of respondents nested in neighborhoods, we use each respondent as a key

informant of the neighborhood's minority composition (Bauer, 2003; Bollen and Paxton, 1998; Mehta and Neale, 2005; Speizer and Bollen, 2000):

$$(1) \quad y_{ik} = \eta_k + \varepsilon_{ik}$$

where y_{ik} is the assessment of the percent non-Anglo Saxon in the neighborhood reported by the i -th respondent of I respondents in the k -th neighborhood, η_k is the latent variable of common perception of percent non-Anglo Saxon in the neighborhood, and ε_{ik} is a disturbance term. The *multiple causes* (in Figure 1 these are the x variables that causally impact the latent variable) are represented by the various measures of the minority composition as objectively measured along three dimensions—ancestry, religion, and language. This is represented in our model by predicting the neighborhood-level random effect in the level 2 equation as:

$$(2) \quad \eta_k = Z_k B + \varepsilon_k$$

where η_k represents the overall perception of percent non-Anglo Saxon in neighborhood k , Z represents a matrix of the racial/ethnic composition proxy variables measured at the level of the neighborhood k , B is a vector of the effects of these measures on overall perception of percent non-Anglo Saxon, and ε_k is a disturbance for neighborhood k .

<<<Figure 1 about here>>>

The advantage of our MIMIC model approach is that it takes into account *both* the indicators and the causes. That is, it uses both the ACCS survey data that asks about resident perceptions (which could be captured by using the strategy of computing the mean perception of percent non-Anglo Saxon in the neighborhood as reported by the residents), as well as the administrative census data that provides objective measures of the neighborhood's racial and ethnic composition. It is the combination of both of these sources of data that allows us to create the innovative latent measure of *perceived minority presence*.

The key innovation in our approach is that our latent measure of *perceived minority presence* not only provides a sophisticated assessment of the neighborhood composition as it is collectively perceived and as it objectively exists, it also allows us to capture an individual's *minority status distortion*, which is our central independent variable. This measure reflects the respondents' under or overestimation of the proportion of minorities in the neighborhood. That is it depicts the extent to which any individual in the neighborhood differs from our latent construct of *perceived minority presence*. Thus the estimate of the residual (ε_{ik}) from the level 1 equation represents the degree to which each resident distorts the presence of minorities in a neighborhood. This approach is different from other approaches that attempt to measure perceptions of minority presence (see Alba, Rumbaut and Marotz, 2005; Nadeau, Niemi and Levine, 1993; Wong, 2007). To illustrate the differences in approaches, we compared our latent measure of perceived minority presence with a measure that simply summed the respondents' perception of minority presence in the neighborhood. We created neighborhood-level measures of these different approaches to measuring perceptions of minority presence and found that they were correlated .65, suggesting that there are important differences between these constructs. The correlation of our minority status distortion measure and the simple neighborhood average of the proportion of non-Anglo Saxon residents (derived from the census data) is just .32⁴.

In our paper, we also assess whether or not there are spatial effects that are not captured by our model specification. We created spatially lagged variables of all of our ethnic composition measures based on an inverse linear distance decay function capped at five miles (beyond which neighborhoods have no effect on the focal neighborhood). This approach of only including spatially lagged versions of the exogenous neighborhood measures—and not a spatially lagged version of the outcome measure—is theoretically informed (i.e., there is no reason to think that an individual's perception of the ethnic composition would change the

actual composition of nearby neighborhoods), and follows the approach of Morenoff (2003). We estimated additional models with these spatially lagged variables and found that they did not change any of the substantive findings; furthermore, they did not improve the overall fit of the model. Thus, the neighborhood aggregations effectively capture these spatial effects.

Stage Two: Estimating Perceptions of Disorder

In the second stage of our analysis we estimate the perceived disorder models by taking our *minority status distortion* measure from the first stage of the analysis and including it as a covariate when we estimate the models predicting perceptions of disorder. Recall that this measure adjusts the respondent's estimate of the percent non-Anglo Saxon in the neighborhood by subtracting it from our latent neighborhood variable. In these models, we are testing the effects of minority status distortion on perceptions of disorder while simultaneously controlling for key individual- and neighborhood-level measures that might also explain perceptions of disorder.

VARIABLE INFORMATION

Outcome Variables

In the first stage of analysis, the outcome variable is the respondents' perception of the racial and ethnic composition of the local neighborhood, measured as the perceived percentage of people in the community from a non-Anglo Saxon background. In the second stage of models, the outcome variables capture perceptions of disorder. To measure *perceived disorder*, respondents were asked to rate on a scale of one (no problem) to three (a big problem) the degree to which seven particular incivilities posed a problem in their

neighborhood (for a full list of items comprising the scale see Appendix 1). The scale yielded a Cronbach's alpha reliability statistic of .819.

Independent Variables

To capture the cues of social distance (ancestry, religion and language) in the first stage of modeling, we created several measures of the racial/ethnic composition of the neighborhood. We constructed six measures based on ancestry as the percentage of the population that has emigrated from the following locations: 1) South-Eastern Europe; 2) North-Western Europe; 3) Middle East; 4) Asia; 5) the Americas; 6) Africa. We also included a measure of the percentage of Indigenous residents, to capture differences for non-immigrants who nonetheless represent distinct cultures. To capture religion effects, we computed measures of the percentage of the neighborhood population that belongs to the following religions: 1) Christian; 2) Hindu; 3) Islam; 4) Judaism; 5) other religions. To capture differences due to language use, we constructed measures of the percentage of residents who speak the following languages in their home: 1) Indigenous languages; 2) Indian languages; 3) Spanish; 4) Western European languages; 5) Eastern European languages; 6) North-East Asian languages (Chinese, Khmer, Korean, Vietnamese); 7) South-East Asian languages (Filipino, Indonesian, Tagalog); 8) Samoan; 9) Japanese⁵.

Our second stage of analysis includes measures of social cohesion at the individual and neighborhood level. To capture residents' own perceptions of social cohesion in their local community, we computed a *social cohesion* scale (alpha .671) that comprises four items from the ACCS (see Appendix 1 for a list of these items). Approximately 12 percent of the variation in this scale is attributable to differences across neighborhoods. We also created a neighborhood level version of this measure that accounts for compositional effects: we estimated fixed effects models that included indicator variables for all neighborhoods in each

city, as well as several individual characteristics that might systematically bias perceptions of social cohesion in the neighborhood⁶. Then, the estimated coefficients for each of the neighborhoods from these analyses were used as unbiased estimates of the amount of social cohesion in the neighborhood⁷.

Additionally, we constructed several measures that might explain neighborhood-level differences in perceived disorder. Three measures capture possible important social structural characteristics as posited by social disorganization theory. *Residential stability* is measured as the proportion of people living at a different address five years prior, from the ABS 2006 census data. We created a measure of *median income* from the same source. We captured the racial/ethnic composition of the neighborhood with two measures. First, we created an aggregate level measure of our innovative latent measure of perceptions of minority presence that uses the responses of residents to the ACCS survey. As described in detail earlier in the paper, this measure incorporates the ACCS survey data that asks about resident perceptions of minority presence and objective measures of the neighborhood's racial and ethnic composition. Second, given the importance of perceptions of the presence of Indigenous residents, we constructed a measure of the *percent Indigenous* in the neighborhood. To control for official levels of crime in the neighborhood, we included a measure of the total crime rate⁸ (per 100,000 persons). These administrative data come from the Queensland Police Service and Victoria Police. Given that population density might increase knowledge and awareness of such problems, we constructed a measure of *population density* as the total persons per square kilometer.

To account for individual level differences in perceptions of disorder in the neighborhood, we constructed several measures capturing socio-demographic characteristics. We constructed measures of approximate annual household income (1 = less than \$20,000, 2 = \$20,000 to \$39,999; 3 = \$40,000 to \$59,999; 4 = \$60,000 to \$79,999; 5 = \$80,000 to

\$99,999; 6 = \$100,000 to \$119,999; 7 = \$120,000 to \$149,999; 8 = \$150,000 or more); highest level of education (1= post graduate qualifications; 2 = a university or college degree; 3 = a trade, technical certificate or diploma; 4 = completed senior high school; 5 = completed junior high school; 6 = primary school; 7 = no schooling; 8 = other response); whether own or rent; length of residence at the current address (1= less than 6 months; 2 = 6 months to less than 12 months; 3 = 12 months to less than 2 years; 4 = 2 years to less than 5 years; 5 = 5 years to less than 10 years; 6 = 10 years to less than 20 years; 7 = 20 years or more); whether the respondent speaks a language other than English at home and whether the respondent has dependent children. We included measures of marital status (single, widowed, or divorced, with married as the reference category), age and gender. We constructed several ancestry measures: 1) Middle Eastern; 2) Asian; 3) South-Eastern European; 4) South African; 5) Indigenous Australian. Northern Europeans are the reference category. The summary statistics for the variables included in the analyses are presented in Appendix 2.

RESULTS

DISTORTED PERCEPTIONS OF MINORITY PRESENCE

In stage one of our analyses we address our first research question: What cues of difference lead to greater perceived minority presence? These are the results of models using the latent neighborhood measure of perceived percent non-Anglo Saxon as the outcome (equation 2 as described in the methods). In Table 1, Model 1 displays the results for the model estimated in Brisbane and Model 2 displays the results for Melbourne. In Model 1, we see that among the ancestry variables, three are important for explaining variations in

perceived non-Anglo Saxon presence across neighborhoods: higher percentages of residents from Asia, the Middle-East, and South-Eastern Europe increase the perception of non-Anglo Saxon in the neighborhood. A one percentage point increase in immigrants from Asia increases the perceived non-Anglo Saxon by 0.5 percent, whereas a similar increase in Middle Eastern immigrants increases the perceived non-Anglo Saxon by 1.6 percent, and a similar increase in South-Eastern Europeans increases it by 1.9 percent. It is notable that in this same model the presence of Indigenous residents also has a strong effect on the perception of non-Anglo Saxon residents: A one percentage point increase in Indigenous residents increases the perceived percent non-Anglo Saxon by 1.4 percent.

In our exploration of social distance, ancestry is only part of the story. We find that language and religious affiliation are also important for explaining neighborhood variations in estimates of minority presence. Among the measures of religious affiliation, it is the presence of Muslims in a neighborhood that most strongly increases perceptions of minority presence, as a one percentage point increase in Muslims in the neighborhood increases the perceived percent non-Anglo Saxon 0.7 percent. Among languages, the Asian languages appear most salient in increasing perceptions of minority presence in a neighborhood. Neighborhoods with more residents speaking South-East Asian or North-East Asian languages, or more residents speaking Samoan, have higher perceptions of the proportion of non-Anglo Saxon residents in their neighborhood. Whereas a one percentage point increase in residents who speak North-East Asian languages increases the perceived percent non-Anglo Saxon 0.4 percent, a similar increase in residents speaking South-East Asian languages increases perceived percent non-Anglo Saxon 1.6 percent, and a similar increase in Samoan speakers increases it 2.1 percent⁹. This model explains 39 percent of the variance across neighborhoods.

<<<Table 1 about here>>>

In Model 2, we present the same model estimated on the Melbourne sample. Similar to the results for Brisbane, we see that residents in neighborhoods with higher levels of immigrants from South-Eastern Europe and Asia report higher proportions of non-Anglo Saxon residents living in their area. One difference is that the size of these coefficients is only about 50-60 percent as large as those in the Brisbane sample. In contrast to Brisbane, in Melbourne we see that the presence of immigrants from the Middle East (independent of the effect of Muslims) does not significantly impact residents' perceptions of the size of the non-Anglo Saxon population in a neighborhood. Yet the proportion of Indigenous residents increases the perceived proportion of non-Anglo Saxons in a neighborhood. When looking at the influence of religion on residents' perceptions of the non-Anglo Saxon population, just as in Brisbane, the presence of more Muslims increases estimates of minority presence. Again, this is the one religious group that has a significant, positive effect. Notably, in a model where we did not include the measure of percent Muslims, the effect of the percent of Middle-Eastern ancestry was significant and much stronger. We also see that higher concentrations of Asian and Samoan languages spoken in a neighborhood lead residents to overestimate the size of the non-Anglo Saxon population, similar to the Brisbane results. In addition, the presence of more persons speaking Indian languages also leads to overestimates of the minority population. Overall, our results suggest that language spoken is a relatively strong cue about minority presence within the Melbourne area¹⁰.

“SEEING” MINORITIES AND PERCEPTIONS OF DISORDER

We next turn to the models testing the mechanisms that we hypothesize influence residents' perceptions of the level of disorder in the neighborhood. In these models, we include our innovative minority status distortion measure which captures the extent to which

respondents over or underestimate the percent of non-Anglo Saxon residents in their neighborhood (see Table 2 and Appendix 3 for the full complement of results).

As Table 2 shows, we find that when residents overestimate the presence of minorities in their neighborhood, they report significantly higher perceptions of disorder (Model 1 for Brisbane and Model 4 for Melbourne). Given that our outcome variable of disorder is a standardized variable (the factor scores from the factor analysis are scaled to have a mean of 0 and a standard deviation of 1), all coefficients in the table can be interpreted in terms of standard deviation changes in disorder. Perceiving that there are 20 percent more minorities in the neighborhood than are actually present (approximately a one standard deviation increase on the perception of minority presence measure) increases perceived disorder .063 standard deviations in Melbourne and .161 standard deviations in Brisbane ($.0032*20 = .063$ for Melbourne and $.0081*20 = .161$ for Brisbane). In both sites, overestimating the minority presence was one of the strongest predictors of perceived disorder (as measured by the t-statistic) even when controlling for a comprehensive range of individual and community level predictors, including neighborhood levels of perceived minority presence. The effect is more than twice as strong in Brisbane as in Melbourne.

<<<Table 2 about here>>>

We note that the effects of the social structural measures in this first model largely conform to expectations. In line with a long tradition of disorder research, across both Brisbane and Melbourne neighborhoods with lower levels of income, or higher total crime rates, have higher levels of perceived disorder. In addition, Brisbane neighborhoods with more residential instability or a higher proportion of Indigenous residents have higher levels of perceived disorder (although these effects are weaker in Melbourne)¹¹.

THE MEDIATING AND MODERATING EFFECTS OF SOCIAL COHESION

We next explore the extent to which social cohesion (both at the individual and neighborhood level) mediates the effect of “seeing” minorities and perceiving disorder. We detect partial mediating effects. In both cities, individuals who perceive higher levels of social cohesion in the neighborhood perceive less disorder (Models 2 and 5). A one standard deviation increase in an individual’s perceived social cohesion reduces perceived disorder about .19 standard deviations in these two cities. There is an additional contextual effect in which residents in neighborhoods with higher aggregate levels of social cohesion report less disorder: A one standard deviation increase in aggregated social cohesion reduces perceived disorder .12 and .18 standard deviations on average in Brisbane and Melbourne, respectively¹².

In these models, the effect of overestimating minority presence in a neighborhood on perceptions of disorder is partially mediated by social cohesion: The coefficient for the perceived minority presence estimate is 13 percent smaller in Brisbane and Melbourne compared to Models 1 and 4 without the social cohesion measures. It is worth emphasizing that including the measures of social cohesion improve the model fit, particularly for the Melbourne sample. For Brisbane, the variance explained at the neighborhood improved from 68 percent in Model 1 to 75 percent in Model 2 when adding social cohesion, whereas these values jumped from 27 percent in Model 1 to 62 percent in Model 2 for the Melbourne sample.

We next test if social cohesion moderates the relationship between overestimating minority presence in a neighborhood and perceived disorder. We find that it does: In Melbourne, it is an *individual’s own* perceived level of social cohesion that moderates the effect of seeing minorities on perceptions of disorder. In Brisbane, it is the *neighborhood*

level of social cohesion that moderates this effect. In both instances, higher levels of social cohesion diminish the association between overestimating the minority presence in a neighborhood and perceiving disorder.

To get a sense of the magnitude of this effect, we plot the results for Brisbane in Figure 2. At low levels of neighborhood social cohesion (one standard deviation below the mean), an individual's tendency to overestimate the minority presence in the neighborhood has a particularly strong effect on perceiving disorder: An individual who overestimates concentrations of minorities (one standard deviation above the mean) sees .25 standard deviations more disorder in the neighborhood than does someone who underestimates concentrations of minorities (one standard deviation below the mean). These values can be seen by comparing the points on Figure 2: the first comparison views the highest and lowest points on the left hand side of the figure, whereas the second comparison views the highest and lowest points on the right hand side of the figure.

On the other hand, the effect of overestimating the presence of minorities on disorder in high cohesion neighborhoods is much smaller: in such neighborhoods an individual overestimating minority concentration perceives just .15 standard deviations more disorder in the neighborhood than does someone underestimating minority concentration. Thus, highly cohesive neighborhoods blunt the effect of overestimating the minority population on perceiving disorder. The variance explained at both level 1 and level 2 is improved in this model.

<<<Figure 2 about here>>>

In contrast to the effects of social cohesion in Brisbane neighborhoods, the Melbourne story is slightly different. In Melbourne, it is an individual's own perception of neighborhood social cohesion that moderates the relationship between minority status distortion and

disorder. Plotting this effect in Figure 3, we see that an individual's own perceived social cohesion strongly moderates this relationship: When comparing two individuals who perceive a low level of social cohesion in the neighborhood, the individual overestimating minority presence in his or her neighborhood reports .18 standard deviations more disorder than does the individual underestimating it. This gap, however, is just .05 standard deviations when comparing two individuals perceiving high levels of social cohesion in the neighborhood. Thus, overestimates of the minority presence, when considering social cohesion, have different implications for how much disorder a respondent observes.

<<<Figure 3 about here>>>

As one final observation, we note that social cohesion also largely mediates the relationship between the proportion of Indigenous residents and perceived disorder in Brisbane: in Model 2, the size of the effect of Indigenous residents is just over half that in Model 1. Thus, neighborhoods in Brisbane with greater proportions of Indigenous people have less social cohesion, which leads to higher levels of perceived disorder.

DISCUSSION AND CONCLUSION

Previous studies show that residents report higher levels of disorder when they live in neighborhoods with high proportions of minority groups (Franzini, et al., 2007; Sampson, 2009; Sampson and Raudenbush, 2004). Moreover, this relationship prevails even when holding constant objective levels of disorder in the area. In this paper we sought to explore the mechanisms that shape subjective assessments of neighborhood disorder. We considered whether perceptions of disorder are driven by the actual racial/ethnic composition of the neighborhood and whether perceiving high levels of disorder derives from residents overestimating (or distorting) the presence of minorities in the neighborhood. We also

assessed the way that social cohesion influenced the relationship between “seeing minorities” and perceiving disorder.

Overall, our analyses show that perceptions of neighborhood disorder are in part explained by the way in which the racial/ethnic composition of the neighborhood is perceived. Our results indicate that when residents overestimate the presence of minorities in their neighborhood, they also see more disorder. This relationship remains strongly significant even after controlling for a comprehensive range of individual and community characteristics, including our neighborhood level measure of perceived minority presence. Importantly, we find that social cohesion partially mediates this association: Participants living in socially cohesive neighborhoods report less disorder. Our results also indicate that social cohesion moderates the relationship between seeing minorities and perceiving disorder. The patterns between the two Australian cities, however, are slightly different: In Brisbane, the relationship between greater minority status distortion and perceiving more disorder is weaker when they live in socially cohesive neighborhoods. In Melbourne, this relationship is weaker when individuals themselves perceive more social cohesion. We discuss these city variations in more detail below.

Drawing on the social distance literature, our study suggests that respondents’ over or underestimations of the minority presence in a neighborhood is strongly associated with their perceptions of disorder. In line with our first hypothesis, multiple cues of race and ethnicity (including region of birth and ethnic and cultural practices like language and religion) increase the perception of minority group size in the neighborhood. Individuals who overestimate the presence of minorities then perceive more disorder, even after controlling for the social structural characteristics of the neighborhood. Thus, overestimating the proportion of residents who appear (or sound) different significantly influences heightened perceptions of neighborhood problems. These results confirm earlier research (see Chiricos

McEntire and Gertz, 2001) and advance our understanding of the influence of “seeing” minorities from other research (see Griffiths and Pedersen, 2009; Sampson, 2009; Sampson, Morenoff and Gannon-Rowley, 2002; Skogan, 1986). In particular, our research provides strong support for Sampson and Raudenbush’s (2004) argument. Specifically how residents “see” others in their neighborhood has significant implications for perceptions of neighborhood problems.

Our study extends this research by finding, at least in the Australian context, that skin color is not the only cue that influences the association between perceived minority presence and disorder. We find that cultural practices that signal difference such as religion or language also influence the way people perceive the presence of minorities. In both the Brisbane and Melbourne neighborhoods, the proportion of residents of Islamic faith and those speaking languages other than English were positively associated with neighborhood perceptions of minority presence.

Sampson’s (2012) *Great American City* argues for the importance of taking context into account in contemporary urban research. We find that city context matters a lot: Overestimates of minority presence vary between the cities of Melbourne and Brisbane. We suggest this is the result of their different racial, cultural and ethnic histories. For example, while high concentrations of Indigenous residents strongly influenced over-estimating minority presence in Brisbane and Melbourne neighborhoods, the strength of these effects differed across cities. In Brisbane neighborhoods, higher proportions of Indigenous people were associated with “seeing” more minorities and perceiving more disorder when compared to Melbourne.

In Australia, the Indigenous population is perhaps the only uniform racial group. Australia’s history is marred by poor Indigenous relations (Baldry and Green, 2002; Halloran, 2004). As a consequence, Indigenous Australians not only experience disadvantage across a

range of social and economic indicators (Australian Bureau of Statistics, 2010; 2010b), but they are also perceived as welfare dependent, substance addicted and are associated with crime, disorder and disadvantage (Dunn et al., 2004; Griffiths and Pedersen, 2009; Shaw, 2000). Consistent with group threat theory (see Blalock, 1967; Quillian, 1995), we find that the strength of these negative associations may be due to the group size. Brisbane comprises a higher proportion of Indigenous residents when compared to Melbourne, which suggests, that the impact of “seeing” Indigenous people on resident perceptions of minority presence is greater in Brisbane than in Melbourne.

We also find that the association between perceiving minority presence in neighborhoods and the proportion of immigrants, those speaking languages other than English, and those with non-Christian beliefs is much stronger in Brisbane than in Melbourne. We believe this is because Melbourne has a longer history with non-English speaking immigrants and it is a city that is likely to provide a more socially inclusive environment for settlement. Although higher levels of immigrant settlement are associated with attitudes favoring less immigration at a national level (Betts, 2008), two studies provide evidence that Melbourne may be more welcoming toward immigrants than other cities in Australia: the first study finds that residents of Melbourne hold slightly more favorable views of multiculturalism and ethnic diversity and report fewer “outgroups” when compared to Sydney (see Forrest and Dunn, 2010). The second study explicitly tests for differences across states and cities and finds that Melbourne is more supportive of immigration when compared to all other regions in Australia (Betts, 2008). Thus it is possible that there is less social distance between residents within Melbourne neighborhoods which may, at least partially, explain the difference in the magnitude of perceived minority presence across the two cities. Clearly, our results suggest that the wider context of political, social and economic histories of cities matter.

Our second hypothesis sought to assess whether or not social cohesion would mediate the relationship between overestimating the minority presence in a neighborhood and perceiving disorder. Sampson (2009: 26) points out: “because the link between cues of disorder and perception is socially mediated, it is malleable and thus subject to potential change”. Our findings support this assertion: Social cohesion partially mediates the effects of perceived minority presence on perceived disorder.

Our final hypothesis explored whether or not social cohesion might also moderate the relationship between seeing minorities and perceiving disorder. Our results show that although greater social distance typically leads to perceiving more minorities, and elevates residents’ perceptions of disorder, high levels of social cohesion circumvents this relationship. In Brisbane, residents who overestimated the presence of minorities in the neighborhood were particularly likely to perceive more disorder if they were living in neighborhood that was not socially cohesive. In Melbourne, we find that individually reported social cohesion has the same effect: When residents themselves perceive the neighborhood as socially cohesive, the relationship between distorted estimates of minority presence and perceived disorder is attenuated. As Sampson (2009) argued previously, we believe these findings suggest that the way the social context is perceived has a significant influence on the way it is then experienced.

While our results extend our understanding of the subjective nature of disorder, there are two caveats to consider. First, the current study is cross-sectional in nature, so we cannot assess the extent to which *increases* in the actual proportions of minorities in neighborhoods influence the way residents see minorities and perceive disorder. In the literature, it is suggested that it is increasing diversity that poses a problem for Western society (see Putnam, 2007). Thus it might be that changes in the racial and ethnic composition of neighborhoods are more consequential for implicit biases and the way people distort the levels of minority

presence. However, the inverse is also possible. As Sampson (2009) suggests, the diversification of cities might eventually break down these classifications of disorder. While exploring the longitudinal patterns of ethnic and racial change in neighborhoods is beyond the scope of the current project, it is an important consideration for future research.

Second, the present analysis does not control for the influence of the levels of inter-ethnic ties within neighborhoods. Contemporary studies of contact theory consider the influence of inter-ethnic friendships on a range of attitudes, and findings. This literature suggests, therefore, that greater levels of inter-ethnic contact leads to reductions in implicit bias (Aberson, Shoemaker and Tomolillo, 2004). In our study, we have measures of social ties, but we have not collected data that allows us to disentangle variations in neighborhood levels of inter-ethnic social ties. We hope that further studies will be able to distinguish the various types of ties and their effects on the minority-disorder association.

These limitations notwithstanding, we believe the current study goes some way in further explicating the mechanisms that shape perceptions of disorder. Sampson and Raudenbush (2004) and Sampson (2009) show that inter-subjective assessments are consequential to neighborhood disorder beyond the economic or criminogenic conditions of the area. In our paper, we measured the theoretical mechanisms that help contextualize this relationship. This earlier research, in conjunction with the present study, suggests that while attempts to reduce levels of disorder in a community are important, policy efforts that concentrate on removing signs of decay may have limited effect on reducing negative associations between how some people “see” concentrations of minority people and neighborhood problems. Instead, our research affirms that policy efforts that focus on enhancing social cohesion in neighborhoods are more likely to reduce (or protect) neighborhoods from the negative consequences of crime and disorder. Thus promoting opportunities for residents to develop shared norms and a working trust are important for

fostering positive perceptions of the presence of minorities and how disorder is understood and managed in urban neighborhoods.

NOTES

1. There are various definitions of social distance. One literature follows Simmel (1955) and Blau (1977; 1987) and focuses on social distance as potentially generated by a large number of social categories (Akerlof, 1997; Hipp, 2010; Hipp and Perrin, 2009; Mayhew, McPherson, Rotolo, and Smith-Lovin, 1995). The social network literature measures it as the number of ‘steps’ two persons are from one another.
2. The neighborhoods in Brisbane include those that are adjacent to the central business district and those located in peri-urban areas that have experienced large increases in population growth. In Australia, neighbourhoods are referred to as suburbs. Suburbs are similar to census tracts in the U.S. context, but can be larger as they are not determined by population. In all models we control for the variation in the neighborhood population and throughout the paper we refer to state suburbs as neighborhoods.
3. In the Australian context Anglo Saxon (or Anglo) is the common use term for “Caucasian” including not only British descendants but also those of Irish and Scottish descent (Ali and Sonn, 2009).
4. We also estimated ancillary models that included the more typical measures of perceived minority presence and the average perceived minority presence. Although the general pattern of results was similar in these ancillary models, the effect of our latent measure of minority status distortion on perceived disorder was 9 percent larger in the Melbourne sample and 21 percent larger in the Brisbane sample based on the standardized coefficients than in these ancillary models.
5. We also tested models with all languages included as separate variables to assess whether some languages have consistently unique effects. “South-East” Asian languages showed a different pattern of effects than the “North-East” Asian languages, the Japanese language had a negative effect on perceived non-Anglo Saxon and the Samoan

Comment [JH1]: Is this footnote 4? Maybe move the number up to here to make that clear.

language showed the strongest positive effect. Of the various Southern European languages, only Spanish language showed a consistently different effect.

6. The following individual level characteristics were included in the model: household income, education level, length of residence in the neighborhood, female, age, homeowner, marital status (indicators for single, widowed, and divorced with married as the reference category), presence of children, and speaking only English in the home.
7. A previous study found very high similarities whether constructing measures using a frequentist approach, as we do here, or using a Bayesian approach (see Steenbeek and Hipp, 2011, footnote 12 on page 846).
8. We also estimated models that substituted for total crime a measure of a) violent crime; b) property crime; c) nuisance crime; and d) drug crime. The results were very similar regardless of which measure we included.
9. Because of multicollinearity issues, the percent speaking Asian or Eastern European languages could not be included. The effect of these measures is contained within the analogous ancestry measure coefficient.
10. Although not a focus of our study, we also tested which individual level characteristics explain systematic bias toward perceiving more minorities. In these models owners and older persons tend to underestimate the presence of minorities (in Brisbane only) and females overestimate the presence of minorities more than males. Middle Easterners, Asians, South-Eastern Europeans and Indigenous residents underestimate the presence of minorities when compared to Australian born residents.
11. Among the individual level measures, females, those who speak only English at home, and those with longer residence perceive more disorder in the neighborhood across both samples. However, it is only in Melbourne that married persons (compared to those who

are divorced), those with higher levels of income, and those with higher levels of education perceive less disorder.

12. We also estimated additional models where the individual measure of cohesion is group-mean centered. As is well known (Raudenbush and Bryk, 2002), the individual-level coefficient is unchanged in these additional models and the neighborhood-level measure of cohesion is a sum of the individual and neighborhood measures from our presented models. With group mean centering, the neighborhood measure of social cohesion has a coefficient of $-.69$ in Model 2 and $-.877$ in Model 5.

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Appendix 1. ACCS Items – Community Problems and Social Cohesion Scales

Social Cohesion Scale	Community Problems Scale
<p>People around here are willing to help their neighbors? Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>Drugs</p>
<p>This is a close-knit neighborhood? Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>Public Drinking</p>
<p>People in this neighborhood can be trusted. Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>People loitering or hanging around</p>
<p>People in this neighborhood do not share the same values. Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>People being attacked or harassed because of their skin color, ethnic origin or religion</p>
<p>People in this neighborhood do not share the same values. Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>Vandalism and/or graffiti</p>
<p>People in this neighborhood do not share the same values. Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>Traffic problems such as speeding or hooning</p>
<p>People in this neighborhood do not share the same values. Would you say you strongly agree, agree disagree or strongly disagree?</p>	<p>Young people getting into trouble</p>

Appendix 2. Summary statistics for variables used in analyses

<i>Individual measures</i>	Brisbane				Melbourne			
	(N=4404)				(N=4943)			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Reported non-Anglo Saxon	0.00	100.00	23.59	22.34	0.00	100.00	29.44	23.90
Perceived disorder	-3.00	3.84	0.01	1.00	-3.23	3.88	0.00	1.00
Minority status distortion	-56.34	89.08	0.03	18.63	-63.00	81.00	-0.06	20.55
Speaks only English at home	0.00	1.00	0.89	0.31	0.00	1.00	0.85	0.36
Level of education	0.00	8.00	3.74	1.39	0.00	8.00	3.95	1.37
Household income	1.00	8.00	4.37	2.15	1.00	8.00	4.34	2.15
Owner	0.00	1.00	0.85	0.35	0.00	1.00	0.83	0.37
Length of residence	1.00	7.00	5.40	1.35	1.00	7.00	5.39	1.35
Single	0.00	1.00	0.12	0.33	0.00	1.00	0.15	0.36
Widowed	0.00	1.00	0.07	0.25	0.00	1.00	0.08	0.27
Divorced	0.00	1.00	0.09	0.29	0.00	1.00	0.11	0.31
Age	18.00	93.00	51.24	15.22	18.00	99.00	51.26	16.02
Female	0.00	1.00	0.59	0.49	0.00	1.00	0.62	0.48
Number of children	0.00	9.00	0.75	1.14	0.00	10.00	0.68	1.07
Middle Eastern ancestry	0	1	0.02	0.13	0	1	0.02	0.12

Asian ancestry	0	1	0.06	0.24	0	1	0.07	0.26
Aboriginal/Torres Strait Islander	0	1	0.01	0.09	0	1	0.01	0.09
Other ancestry	0	1	0.05	0.23	0	1	0.11	0.32
Perceived social cohesion	-3.38	1.87	-0.01	0.89	-3.34	2.91	0.00	0.88
<i>Neighborhood measures</i>								
Social cohesion	-0.95	0.69	-0.16	0.30	-0.68	1.08	0.22	0.31
Residential stability	-2.78	1.20	-0.03	0.65	-2.60	1.20	0.24	0.70
Median income	0	2625.00	1242.36	373.74	0	2689.00	1152.33	349.25
Perceived minority presence	1.51	71.88	23.54	9.81	13.57	81.32	29.54	10.87
Population density	0	6155.58	1382.42	1170.31	0	9591.00	2180.89	1670.46
Total crime rate	782.69	189152.08	10978.20	17985.41	105.30	26940.96	6018.15	4365.93
<i>Ancestry</i>								
Percent immigrants from South-Eastern Europe	0.00	14.07	1.82	1.65	0.00	35.69	5.88	4.92
Percent immigrants from North-Western Europe	0.00	27.63	7.85	2.78	0.00	34.35	7.47	3.52
Percent immigrants from Middle East	0.00	8.92	0.59	1.04	0.00	35.63	13.71	3.52
Percent immigrants from Asia	0.00	47.72	5.76	7.07	0.00	51.00	7.84	9.18
Percent immigrants from the Americas	0.00	6.38	1.04	0.88	0.00	7.06	.98	.91
Percent immigrants from Africa	0.00	12.00	1.42	1.42	0.00	14.52	1.08	1.37
Percent Indigenous	0.00	12.15	0.02	0.02	0.00	5.36	0.43	0.65

Religion

Percent Christian	24.95	84.61	64.66	7.04	9.12	86.94	57.88	10.71
Percent Hindu	0.00	11.11	0.59	1.00	0.00	11.85	0.82	1.29
Percent Islam	0.00	21.63	0.95	1.78	0.00	47.05	1.77	4.16
Percent Judaism	0.00	2.54	0.10	0.26	0.00	76.42	1.24	5.35
Percent other religions	0.00	8.89	0.53	0.62	0.00	4.03	0.53	0.57

Language

Percent speaking Indigenous languages	0.00	1.19	0.04	0.16	0.00	1.67	0.02	0.10
Percent speaking Indian languages	0.00	10.87	0.52	0.88	0.00	10.29	0.78	1.23
Percent speaking Spanish	0.00	4.34	0.48	0.70	0.00	7.09	0.47	0.76
Percent speaking Western European languages	0.00	14.69	1.69	1.41	0.00	36.36	6.32	5.40
Percent speaking Eastern European languages	0.00	8.76	0.75	0.93	0.00	39.46	2.06	3.30
Percent speaking South-East Asian languages	0.00	4.09	0.39	0.55	0.00	15.56	0.60	1.14
Percent speaking Samoan	0.00	19.40	0.65	1.73	0.00	5.32	0.10	0.38
Percent speaking North-East Asian languages	0.00	46.33	2.98	5.72	0.00	39.16	3.78	5.32
Percent speaking Japanese	0.00	2.34	0.14	0.30	0.00	3.89	0.17	0.38

Appendix 3. Complete results for the multi-level models examining the relationship between perceived minority presence, social cohesion and perceptions of disorder

	Brisbane sample			Melbourne sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Minority status distortion	0.0081 (10.84)	** 0.0070 (9.54)	** 0.0055 (5.43)	** 0.0032 (4.68)	** 0.0028 (4.02)	** 0.0029 (3.44)
Speak only English at home	0.0971 (1.50)	0.0867 (1.38)	0.0648 (0.97)	0.1550 (3.20)	** 0.1483 (3.14)	** 0.1826 (3.66)
Education	-0.0056 (-0.44)	-0.0056 (-0.45)	-0.0078 (-0.58)	-0.0130 (-1.19)	-0.0107 (-1.00)	-0.0024 (-0.21)
Household income	0.0011 (0.11)	0.0032 (0.32)	0.0033 (0.28)	-0.0253 (-2.55)	* -0.0256 (-2.58)	** -0.0276 (-2.90)
Owner	-0.0678 (-1.51)	-0.0533 (-1.22)	-0.0739 (-1.53)	-0.0489 (-1.22)	-0.0180 (-0.46)	-0.0408 (-0.98)
Length of residence	0.0215 (1.67)	† 0.0218 (1.71)	† 0.0258 (1.90)	** 0.0342 (2.77)	** 0.0391 (3.22)	** 0.0388 (3.12)
Single	-0.0226 (-0.39)	-0.0373 (-0.65)	-0.0490 (-0.82)	0.0933 (1.90)	† 0.0711 (1.47)	0.0842 (1.73)
Widowed	-0.0143 (-0.22)	-0.0095 (-0.15)	-0.0036 (-0.05)	-0.0550 (-0.90)	-0.0486 (-0.81)	-0.0575 (-0.90)
Divorced	0.0397 (0.64)	0.0178 (0.30)	0.0163 (0.29)	0.1870 (3.85)	** 0.1579 (3.30)	** 0.1582 (3.22)
Age	0.0046 (0.76)	0.0061 (1.02)	0.0053 (0.82)	0.0097 (1.86)	† 0.0099 (1.93)	† 0.0067 (1.23)

Age squared	-0.0002 (-2.63)	**	-0.0002 (-2.80)	**	-0.0001 (-2.38)	*	-0.0002 (-3.72)	**	-0.0002 (-3.80)	**	-0.0002 (-2.85)	**
Female	0.0511 (1.80)	†	0.0790 (2.84)	**	0.0808 (2.75)	**	0.1111 (3.89)	**	0.1312 (4.67)	**	0.1336 (4.37)	**
Have children	-0.0142 (-0.97)		-0.0058 (-0.40)		-0.0109 (-0.73)		-0.0134 (-0.91)		-0.0005 (-0.03)		0.0028 (0.19)	
Middle eastern	0.1353 (0.64)		0.1245 (0.61)		0.0487 (0.23)		-0.1268 (-0.83)		-0.1196 (-0.80)		-0.1073 (-0.78)	
Asian	-0.0359 (-0.38)		-0.0353 (-0.38)		-0.0653 (-0.68)		-0.0092 (-0.14)		-0.0002 (0.00)		0.0282 (0.41)	
Aboriginal/Torres Strait Islander	0.0308 (0.21)		0.0717 (0.49)		0.0600 (0.40)		0.0536 (0.38)		0.0480 (0.35)		-0.0653 (-0.43)	
Other ancestry	-0.0362 (-0.57)		-0.0301 (-0.48)		-0.0409 (-0.62)		-0.0351 (-0.75)		-0.0356 (-0.77)		-0.0194 (-0.40)	
Perceived cohesion			-0.2058 (-12.81)	**	-0.1942 (-11.22)	**			-0.2166 (-13.47)	**	-0.2119 (-12.39)	**
<i>Neighborhood level measures</i>												
Perceived cohesion			-0.4839 (-5.49)	**	-0.4738 (-5.38)	**			-0.6606 (-6.91)	**	-0.6853 (-7.04)	**
Residential stability	-0.0976 (-2.72)	**	-0.0816 (-2.38)	*	-0.0811 (-2.37)	*	-0.0400 (-1.12)		-0.0192 (-0.59)		-0.0198 (-0.57)	
Median income (1,000's)	-0.2486 (-3.95)	**	-0.1967 (-3.31)	**	-0.2219 (-3.65)	**	-0.1151 (-1.93)	†	-0.1438 (-2.60)	**	-0.1522 (-2.68)	**
Perceived minority presence	-0.0016		-0.0059	**	-0.0065	**	0.0022		-0.0047	†	-0.0051	*

TABLES AND FIGURES

Table 1. Multilevel models predicting perceived minority presence

	(1)		(2)	
	Brisbane		Melbourne	
<i>Immigrant groups</i>				
Percent immigrants from South-Eastern Europe	1.887	**	0.926	**
	(4.41)		(5.16)	
Percent immigrants from North-Western Europe	-0.065		-0.200	
	-(0.45)		-(1.49)	
Percent immigrants from Middle East	1.597	**	0.194	
	(3.26)		(0.59)	
Percent immigrants from Asia	0.497	*	0.332	†
	(2.01)		(1.78)	
Percent immigrants from the Americas	-0.137		0.027	
	-(0.26)		(0.06)	
Percent immigrants from Africa	-0.022		0.519	
	-(0.07)		(1.56)	
<i>Religion</i>				
Percent Christian	-0.099		-0.018	
	-1.54		-(0.42)	
Percent Hindu	0.566		-0.358	
	(1.00)		-(0.80)	
Percent Islam	0.673	*	0.711	**
	(2.23)		(2.98)	
Percent Judaism	-1.331		-0.017	
	-(0.89)		-(0.18)	
Percent other religions	-0.670		-0.667	
	-(1.07)		-(1.02)	
<i>Languages</i>				
Percent speaking Indigenous languages	-0.865		-3.065	
	-0.35		-0.88	
Percent speaking Indian languages	0.489		1.017	*
	(0.81)		(2.14)	
Percent speaking Spanish	1.050		0.714	
	(1.64)		(1.13)	
Percent speaking Western European languages	-0.766	*	0.200	
	-(2.20)		(1.33)	
Percent speaking Eastern European languages	-0.334		-0.199	
	-(0.55)		-(0.85)	
Percent speaking South-East Asian languages	1.565	†	0.212	
	(1.84)		(0.50)	
Percent speaking Samoan	2.085	**	5.838	**
	(7.42)		(5.96)	
Percent speaking North-East Asian languages	0.427	*	0.355	†
	(2.09)		(1.76)	

Percent speaking Japanese	-2.040		-1.603	
	-(1.51)		-(1.54)	
Percent Indigenous	142.341	**	139.031	*
	(5.00)		(2.41)	
Intercept	19.226	**	18.789	**
	(4.08)		(6.00)	
Variance explained	0.391		0.265	

** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test). Unstandardized coefficients. *T*-values in parentheses.

Table 2. Multi-level models examining the relationship between minority status distortion, social cohesion and perceptions of disorder

	Brisbane sample			Melbourne sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Minority status distortion	0.0081 ** (10.84)	0.0070 ** (9.54)	0.0055 ** (5.43)	0.0032 ** (4.68)	0.0028 ** (4.02)	0.0029 ** (3.44)
Perceived cohesion		-0.2058 ** (-12.81)	-0.1942 ** (-11.22)		-0.2166 ** (-13.47)	-0.2119 ** (-12.39)
<i>Neighborhood level measures</i>						
Perceived cohesion		-0.4839 ** (-5.49)	-0.4738 ** (-5.38)		-0.6606 ** (-6.91)	-0.6853 ** (-7.04)
Residential stability	-0.0976 ** (-2.72)	-0.0816 * (-2.38)	-0.0811 * (-2.37)	-0.0400 (-1.12)	-0.0192 (-0.59)	-0.0198 (-0.57)
Median income (1,000's)	-0.2486 ** (-3.95)	-0.1967 ** (-3.31)	-0.2219 ** (-3.65)	-0.1151 † (-1.93)	-0.1438 ** (-2.60)	-0.1522 ** (-2.68)
Perceived minority presence	-0.0016 (-0.70)	-0.0059 ** (-2.72)	-0.0065 ** (-2.92)	0.0022 (0.84)	-0.0047 † (-1.95)	-0.0051 * (-2.06)
Population density (1,000's)	0.0344 † (1.78)	0.0209 (1.13)	0.0265 (1.47)	-0.0101 (-0.77)	-0.0231 † (-1.86)	-0.0274 * (-2.14)
Percent Indigenous	5.0727 ** (4.26)	2.8906 * (2.47)	3.3541 ** (2.81)	3.0346 (1.21)	2.4252 (1.01)	3.2761 (1.27)
Total crime rate	0.0513 ** (5.36)	0.0432 ** (5.03)	0.0431 ** (5.07)	1.9135 ** (2.69)	1.1538 * (1.99)	0.9907 † (1.73)

Minority status distortion X perceived cohesion			-0.0006 (-0.74)			-0.0018 (-2.39)	*
Minority status distortion X neighborhood cohesion			-0.0087 (-2.98)	**		0.0001 (0.05)	
Intercept	0.1844 (0.85)	0.1311 (0.62)	0.2142 (0.94)	-0.1682 (-0.87)	0.2059 (1.10)	0.2669 (1.32)	
Variance explained (individual)	0.065	0.101	0.105	0.047	0.082	0.085	
Variance explained (neighborhood)	0.677	0.750	0.753	0.272	0.620	0.628	

** $p < .01$ (two-tail test), * $p < .05$ (two-tail test), † $p < .05$ (one-tail test). Unstandardized coefficients. T-values in parentheses.

Figure 1. Example of Multiple Indicators and Multiple Causes (MIMIC) model

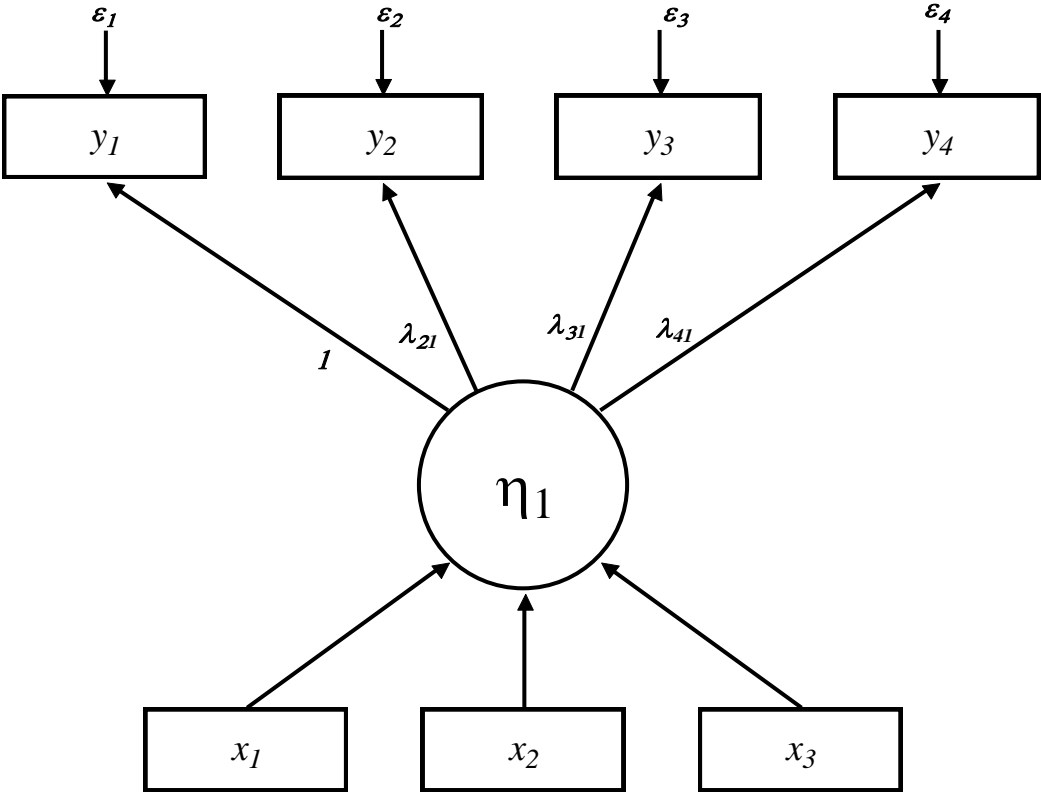


Figure 2. Moderating Effect of Neighborhood Cohesion on the Relationship between Minority Status Distortion and Perceived Disorder in Brisbane Sample

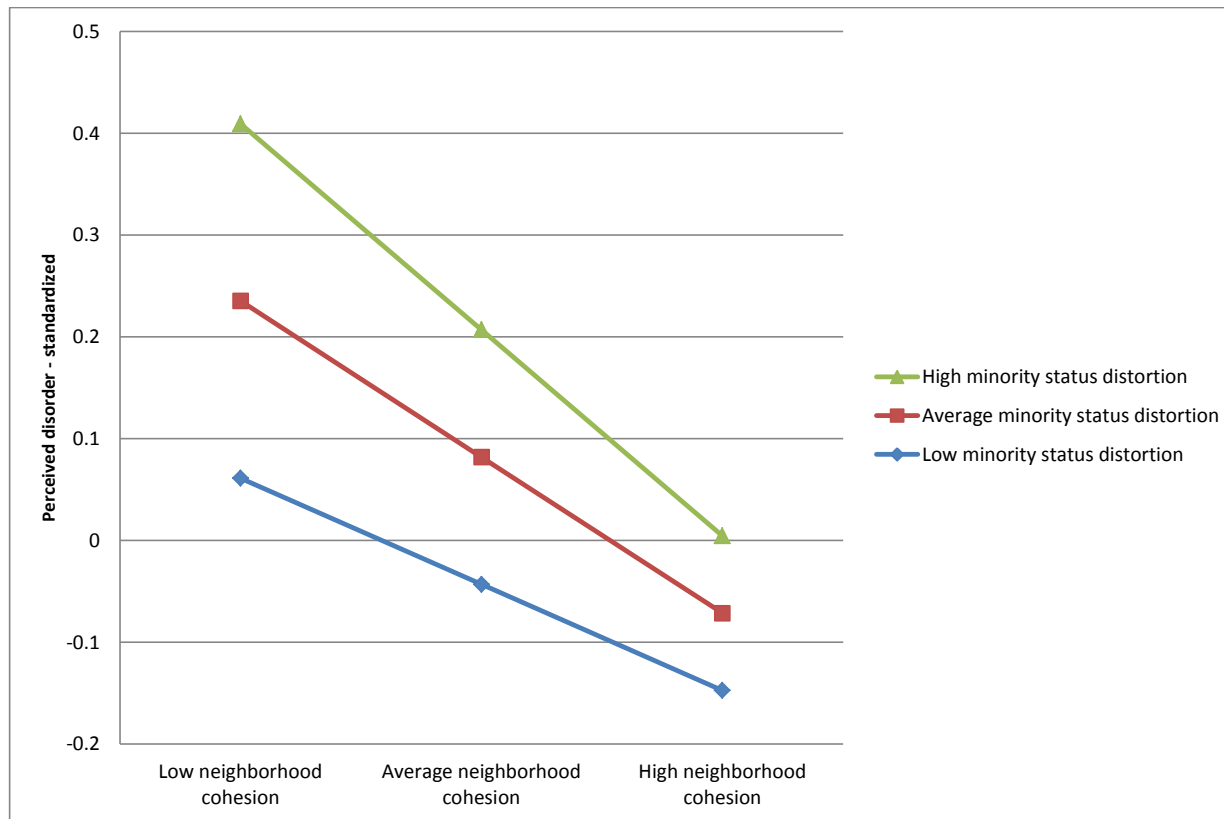


Figure 3. Moderating Effect of Neighborhood Cohesion on the Relationship between Minority Status Distortion and Perceived Disorder in Melbourne Sample

