

# How Does Crime-Specific Victimization Impact Fear of Crime in Urban China? The Role of Neighborhood Characteristics

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Fengrui Jing<sup>1</sup> , Lin Liu<sup>2</sup>, Suhong Zhou<sup>1</sup>,  
and Jiaxin Feng<sup>3</sup>

## Abstract

Past research has failed to find consistent relationships between criminal victimization and fear of crime. Except for neighborhood disorder and crime rate, few studies have examined whether other neighborhood conditions matter the victimization—fear relationship. Using survey data in Guangzhou neighborhoods, the present analysis employs multinomial logistic regression models to examine whether neighborhood characteristics moderate the relationship between violent victimization and fear of violence, and between burglary victimization and fear of burglary, separately. Some aspects of the neighborhood environment do differentially influence victims' and non-victims' fear levels. Besides verifying the interaction effect of neighborhood disorder and victimization, the present study finds that neighborhood policing alleviates the harmful effect of violent victimization on fear, while collective efficacy fosters the harmful effect of burglary victimization on fear. This paper underscores the significance of the social context of urban China in explaining the interplay of neighborhood characteristics and victimization on fear of crime.

## Keywords

fear of crime, violence, burglary, neighborhood, victimization, China

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<sup>1</sup>Sun Yat-Sen University, Guangzhou, China

<sup>2</sup>University of Cincinnati, OH, USA

<sup>3</sup>University of Washington, Seattle, USA

## Corresponding Author:

Lin Liu, Department of Geography, University of Cincinnati, Braunstein Hall, 400E, Cincinnati, Ohio 45221-0131, USA.

Email: [lin.liu@uc.edu](mailto:lin.liu@uc.edu)

## **Introduction**

The victimization—fear link is one of the most controversial issues in Criminology. One of the general findings in fear of crime research is that victims report a greater level of fear of crime than non-victims. A plethora of research has confirmed this observation (Noble & Jardin, 2020; Paasonen & Aaltonen, 2020; Rühls et al., 2017), but some have also demonstrated the weak and/or inconsistent association between victimization and fear of crime (Roccato et al., 2011). As pointed out by LaGRANGE et al. (1992), the victimization—fear link is a paradox. Furthermore, the victimization—fear paradox might be caused by a wide range of factors, including the individual and neighborhood features.

Western research has explored how neighborhood conditions affect victims' and non-victims' fear of crime. An assumption is that victims may be more sensitive to the signs of neighborhood disorder. Simultaneously, neighborhood disorder can affect an individual's fear of crime, leading to higher fear levels that victims generally experience. Studies from Italy and the UK have confirmed that neighborhood disorder and crime rates may interplay with victimization experience to affect fear of crime (Brunton-Smith & Sturgis, 2011; Roccato et al., 2011). However, we still do not fully understand whether other neighborhood factors will affect the impact of victimization experience on fear of crime.

To our best knowledge, studies on fear of crime have not addressed the differences and similarities in how neighborhood conditions influence victims' and non-victims' fear of crime in urban China. Compared with the West, Chinese society has some unique characteristics that may affect the same association, including more different neighborhood characteristics that indicate disorder, stricter neighborhood policing, and larger gated communities. To further understand the influencing mechanism of victimization—fear link under different cultural and social contexts, it is meaningful to explore this association in the Chinese context.

In sum, this article fully examines the relationships between victimization experience, neighborhood conditions, and fear of crime in a Chinese city. The purpose of this study is to clarify the role of various neighborhood conditions for explaining the victimization—fear paradox. It contributes to exploring whether the effects of victimization experience on fear of crime are moderated by certain neighborhood conditions (including collective efficacy and neighborhood policing). Further, it contributes to the victimization—fear mechanism analysis in the non-Western contexts. The research conclusions shed light on Crime Prevention through Environmental Design (CPTED) in terms of enhancing residents' safety perception.

## ***Criminal Victimization and Fear of Crime***

Fear of crime refers to the fear of being a victim of crime, and fear of crime may be a bigger problem than the crime itself (Scarborough et al., 2010). Scholars have been drawn to this topic because the consequences of fear of crime are so pervasive and potentially serious. Recently, in China, fear of crime research continues to increase

because of the need for social security and stability (Liu, Messner et al., 2009; Yan & Qin, 2014; Zhou & Yin, 2020). Conceptualizations of fear of crime differ widely between scholars. As revealed in traditional component process models of emotions (Gabriel & Greve, 2003), fear of crime is a multidimensional concept consisting of three ingredients: affect, cognition, and behavior. The affective component refers to concerns and worries; the cognitive component reflects the perceived risk of being threatened; the behavioral dimension refers to restrictions of action or defensive behaviors (Franklin et al., 2008).

Plausibly, fear of crime occurs not just in the prevision of possible criminal victimization but is also expected to increase after the experience of crime. Several empirical studies from the West and China have illustrated this relationship, that is, if a respondent has been a victim of any crime in the past few years, the person is more likely to report higher concerns about being victimized (Hanslmaier, 2013; Noble & Jardin, 2020; Rühls et al., 2017). Researchers have also found that the fear of crime is strongly related to indirect victimization experience (namely secondary informational sources about victimization events, known via informal social networks such as relatives, friends, and the media) (Elmas, 2021; Mesch, 2000). Doubtlessly, the media may act as an important source of information about crime because most people lack direct experience with violent crime (Hanslmaier, 2013). Wu et al. (2019) investigated the effects of consumption of different media on Chinese fear of crime and found that more newspapers and radio news reports were associated with lower levels of fear while more consumption of political and social news by television and the Internet was linked to higher levels of fear. It indicates that the cultural background in which the media reports on crime is vital to understanding the impact of media on fear. Based on the above literature, both direct and indirect victimization might be related to fear of crime.

However, some studies have failed to find a consistent relationship between criminal victimization and fear of crime. Victimization is not always related to a higher fear of crime (Grubb & Bouffard, 2015; Tseloni & Zarafonitou, 2008). A study by Hough and Mayhew (1983) found that the participants had not encountered any actual problems, and two-thirds of victims had no emotional distress after being victims of crime. Roccato et al. (2011) showed that direct and indirect victimization did not influence fear of crime with a sample in Italy. Different perspectives provide evidence-based explanations for the lack of connection between victimization and fear. Some scholars suggest that it may be due to different types of fear (Alper & Chappell, 2012; Lee et al., 2020). Alper and Chappell (2012) suggested that correlates of fear of property and violent crime were divergent, and the victimization model was more closely related to fear of property crime. Some posit that the weak relationship may be due to the alleviation of the victim's emotions, the decline of memory, the prevention of criminal incidents, and rationalization of crime (Box et al., 1988). Correspondingly, a German study demonstrated that individual processes of self-regulation and coping moderated the occurrence of fear of crime (Rühls et al., 2017).

Extant research about the link between victimization and fear often divides victimization into direct and indirect/vicarious victimization, however, the real

relationship between victimization and fear may be obscured if the research ignores the differences between crime-specific victimization. It is illustrated that some types of criminal victimization are more closely associated with the fear of crime, such as mugging, burglary, or car crime (Ferguson & Mindel, 2007; Gray et al., 2006). Smith and Hill (1991) noted that it was unreasonable to ignore the importance of crime types of victimization in the research because one rape would lead to more fear than the theft of items from a yard. As a theoretical explanation of the gender differences on fear of crime, the shadow of sexual assault thesis proposed by Ferraro (1995, 1996) believes that rape is a key “perceptually contemporaneous offense” and is related to people’s feelings of other crimes. That is, for women, rape is the most harmful offense. It is associated with other crimes and can predict women’s fear of other crimes. Based on Lane and Fox (2013), criminal respondents who are more afraid of sexual assault are significantly more likely to be afraid of crime, and fear of sexual assault has a greater impact on fear of crime for women than men. Skogan (1986) found that both property and personal victimization influence victims’ concerns about crime. However, compared with property victimization, the infrequency of personal victimization may reduce its influence on fear. These studies show that differences in crime types of victimization are important in understanding the victimization-fear relationship.

Meanwhile, victimization can be divided into victimization in different spatial ranges, such as victimization at home, victimization in the neighborhood, and victimization in the public spaces. Lynch and Cantor (1992) discussed the influences of ecological and behavioral variables on property victimization at home. Also, victimization at home might cause some adolescents to have suicidal cognition (Baldry & Winkel, 2003). Victimization in the neighborhood refers to criminal behavior that happens in neighborhood settings, which threatens individual safety. Children and adolescents have high exposure to neighborhood violence, which has been marked as a public health issue (Antunes & Ahlin, 2017). In a model of victimization—distress relation with 123 students, more than one-half of the participants reported that they were victims of community violence (including being chased, hit, robbed, and injured) (Kutner & Fisher, 1998). Victimization in public spaces has emerged as a concerning issue, such as a series of studies on victimization in the workplace (Bowling et al., 2010) and in the school (Katzner et al., 2009). These studies indicate the importance of spatial measures in victimization when studying the victimization—fear relationship.

Despite the general findings that many victims of criminal cases suffer from severe long-term consequences of victimization, the heterogeneity of results indicates that internal processes might modify the individual reaction. There is a need to shift the focus of research to the moderating role of individual and situational factors, especially to the role of the neighborhood contexts where the individuals live. At the same time, the measure of victimization cannot be ignored in understanding the relationship between victimization and fear of crime. Victimization in the *neighborhood*, neighborhood environment, and fear of crime in the *neighborhood* may have some internal connections.

### *Victimization, Neighborhood Characteristics, and Fear of Crime*

A number of criminological studies reveal the relationship between neighborhood characteristics and fear of crime. Neighborhood conditions are a crucial factor widely discussed, not only related to victimization but to fear of crime. According to the Broken Windows theory of Kelling and Wilson (1982), neighborhood disorder/incivilities are causal antecedents to antisocial behavior, serious crime, and fear of crime (Helfgott et al., 2020; Volker, 2017). Once incivilities or signs of physical/social disorder become commonplace, residents experience persistently higher levels of fear of crime. In China, major differences were also found in fear of crime between high disorderly areas and low disorderly areas (Liu et al., 2008; Zhang et al., 2009). Neighborhood disorder, anomie and crime are not rare in major cities in contemporary China (Cao, 2007; Zhang & Zhao, 2018; Zhang et al., 2007). Some of the reasons are due to the prevalence of urban villages. Urban villages<sup>1</sup> are usually inhabited by the poor and transient, typically disorderly areas, which are related to squalor, overcrowding, and social problems, and are also proven to be ostensibly associated with high crime rates (Niu, 2019). Moreover, neighborhood disorder is more closely related to perception of risk than fear of crime, and the effect of neighborhood disorder on fear of crime might be mediated through perception of risk (LaGrange et al., 1992).

A key form of social organization is collective efficacy. The concept of collective efficacy unites informal social integration and control. In general, strengthening collective efficacy can decrease the disorder or violence in the neighborhood and increase feelings of safety (Franklin et al., 2008; Yuan & McNeeley, 2017). Previous studies involving China have also verified the effectiveness of the social integration model in explaining the fear of crime (Qin & Yan, 2018; Wang, 2020). For instance, as an important characteristic of Chinese culture, *Guanxi*<sup>2</sup> refers to having personal trust and a solid relationship with someone (in the neighborhood), also is an indicator of social integration between neighbors, and has been verified to be associated with a lower fear of crime (Zhang et al., 2009). In Chinese society, people's beliefs are deeply rooted in Taoism and Confucianism. Active intervention by bystanders in crime and other emergencies is highly praised in China (Zhong, 2010). An indicator of informal social control can be measured by the degree of bystander intervention. However, since the economic reform era from the 1980s, bystanders' apathy to crime and other emergencies has been widely reported. Some of the helpers were booed, ridiculed, or blackmailed in contemporary China. This might influence the collective efficacy in China's neighborhoods, as those who have a higher level of fear tend to be less likely to intervene (Zhong, 2010).

Based on the neighborhood policing model, police presence and community-related interactions with the police have also been found to reduce crime and fear of crime (Crowl, 2017; Scarborough et al., 2010). In recent years, China has invested a large number of funds to maintain social stability and safety, including extensive installation of surveillance facilities and strengthening of police patrols. The internal reason is that *maintaining stability is the top priority*.<sup>3</sup> However, only a few studies have discussed the relationship between neighborhood policing and fear of crime in China. Residents'

trust in police effectiveness and law enforcement standardization have significant positive impacts on residents' safety perception, while illegal police intervention has a significant negative impact on residents' safety perception (Zhou & Qi, 2019).

The moderating effects of neighborhood characteristics on individual relationships have been studied. As early as 1988, Box et al. (1988) revealed a significant interaction effect of previous victimization and incivilities by examining data from the second British Crime Survey. Overall, they found previous victimization appeared to be negatively related to fear. However, the situation appears more complex if the effects of incivilities are introduced. In areas of high incivilities, the effect of victimization was to increase fear. They explained that it was difficult for victims to take effective precautions against an environment of constant danger and threat, or perhaps neutralization was prevented or forgetfulness denied by repeated encounters with disturbing environmental clues. These environmental clues may cause victims to worry and apprehensive about their living space and their safety within it. Only in interaction with these factors does victimization become a factor leading to fear. Similarly, an Italian study by Roccato et al. (2011) showed that indirect victimization fostered fear of crime only among people living in socially disordered areas, and their study followed the hypothesis that individuals pay more attention to the contextual cues of the environment they live in after victimization.

Besides neighborhood disorder, the crime rate is also a moderator on the association between victimization and fear of crime, which is confirmed in a case of the UK about the relationship between prior victimization, neighborhood crime rate, and residents' fear of crime (Brunton-Smith & Sturgis, 2011), and a case of the Czech Republic about the relationship between classroom victimization, classroom crime rate and student's fear of crime (Kollerová & Smolík, 2016). However, not all studies confirm this relationship. In the Seattle case, Rountree and Land (1996) found that the effect of prior burglary victimization experience on perceived crime risk was not significantly moderated by signs of disorder in the neighborhood by their multilevel approach.

To the best of our knowledge, the literature on the interaction effects of victimization experience and neighborhood characteristics (except disorder and crime rate) on fear of crime is limited. There exists a gap in how various community environments affect the impacts of victimization on fear of crime, especially for crime-specific and space-specific victimization. The victimization - fear paradox needs further exploration.

### *The Present Study*

Neighborhood characteristics can be assumed to explain the transition process from victimization to fear of crime from the perspective of neighborhood perception. Victimization experiences may motivate citizens to notice cues of their surroundings. It may magnify their fear of crime if their exploration makes them see many signs of decay (Roccato et al., 2011). To cope with criminal victimization and threat, victims may perform constrained behavior (Qin & Yan, 2018; Tomsich et al., 2011), and participate in community activities (Rühs et al., 2017), so the use of urban space may

differentially affect victims and non-victims. Thus, neighborhood conditions are very likely to play a significant role in the victimization experience—fear of crime link.

In light of the theoretical considerations and empirical findings summarized above, it can be expected that neighborhood disorder cues should prevent the process of coping with experiences of criminal victimization, meanwhile, the neighborhood policing, and collective efficacy should facilitate adaptive coping with experiences of criminal victimization. Thus, the present study investigates whether the interactive effects between victimization and neighborhood conditions contribute to an explanation of fear of crime. Further, this paper distinguishes two prior victimization types—burglary and violent victimization in the *neighborhood*, and test whether the link of victimization—fear varies across types of victimization.

Overall, the hypotheses to be tested in this study are: (1) prior victimization is positively associated with fear of crime in the Chinese context; (2) the association between victimization and fear will differ by neighborhood conditions; (3) the moderating effects of neighborhood conditions on the link between victimization—fear will vary across crime-specific victimization. We expect that the Chinese case in this study will contribute to examining the relationship between victimization, neighborhood characteristics, and fear of crime in a non-Western cultural context.

## Method

### *Data and Sample*

The current study employs data from the Project on Public Safety in Guangzhou Neighborhoods (PPSGN) (Jing et al., 2020), an interdisciplinary study aimed at understanding how neighborhood contexts affect the safety perception of residents in Guangzhou, China. The survey was designed by Sun Yat-sen University and distributed by the HOUSONWELL market research (<http://www.hswell.com/>), a well-known market research company in China. The sampling process is as follows. First, using data based on more than 30 attributes in the 2010 National Census data,<sup>4</sup> through PCA (principal component analysis) approach, all census neighborhoods<sup>5</sup> in Guangzhou were divided into nine types of social areas.<sup>6</sup> Thus, the upcoming stratified sampling based on the social areas can ensure that the samples represent various types of neighborhoods in Guangzhou. Then, the sample size of each social area was determined by the proportion of the population in each social area to the total population of Guangzhou. Finally, 90 diverse sampled neighborhoods were systematically selected using an equal probability of selection method, and sufficient samples were obtained in each neighborhood by the designed quota. From January to April 2016, the PPSGN collected information from 1,994 Guangzhou residents, with a response rate of 87.4%.<sup>7</sup>

Prior victimization is a key variable in this study, and is measured by asking the respondents if they have experienced victimization in their neighborhoods in the past 3 years. Therefore, it is critical to ensure that residents live in their neighborhoods for no less than 3 years. We deleted cases where the length of residence of residents was less than 3 years. Further, a series of literature has shown that neighborhood



integration and perception for migrants and locals are divergent in China (Zhao, 2008; Wu, 2012), which may affect residents' fear of crime in the neighborhood. Migrants are also more likely to move than locals. Hence, to build a succinct model, this article takes the locals of Guangzhou as the research sample for analysis.

Finally, 835 locals who have lived in a neighborhood for more than 3 years were selected. The sample was composed of 55.8% females, with an average age of 43.37 years, and 18.4% of participants had a personal income higher than 5,000 Chinese currency (Current Tax threshold in China) per month. The age, gender, and income percentages of locals in our survey are consistent with another survey of Guangzhou residents conducted by Liu et al. (2017), which indicates our survey has a solid validity and reliability.

## Measures

### *Dependent variables*

*Fear of crime.* The dependent variable is comprised of two estimates of fear of crime: fear of violence and fear of burglary in which one resides. Two questions were asked to tap fear of crime, "How fearful are you of being physically attacked in your neighborhood?" and "how fearful are you of being domestic burgled?" Five responses that included "not at all fearful (1)," "not very fearful (2)," "somewhat fearful (3)," "fearful (4)," and "very fearful (5)" were given.

*Independent variables.* All of the following neighborhood variables are of interest in predicting fear of crime, particularly through interactions with victimization experience.

*Perceived physical and social disorder.* Respondents were asked about a series of conditions separately and whether it was present in their surroundings. The perception of neighborhood disorder is a composite variable (summed across several items). The variable perceived physical disorder reflects a scale ranging from 0 to 5, including the following items: abandoned cars and/or trash, damaged public facilities and/or poor lighting, graffiti and/or disordered advertisements, and noisy neighborhood environment (Cronbach's  $\alpha = .82$ .  $\alpha$  means the internal consistency of the measure and has the same meaning where it appears again below). The variable perceived social disorder reflects an increasing scale ranging from 1 to 5, including the following items: drunken persons on the streets, teenagers gathering on the streets, suspicious strangers, and residents conflicting on the streets ( $\alpha = .84$ ). In the total sample, the mean is 2.95 and 2.04 for physical disorder and social disorder, respectively.

*Collective efficacy.* Respondents were asked about their perception of collective efficacy in their neighborhood, combining the informal social integration and control. The variable perceived informal social integration reflects a scale ranging from 0 to 5, comprised of visiting informally with neighbors, chatting with neighbors, borrowing things like tools from neighbors, and belonging to a network in which neighbors help



each other. The variable perceived informal social control reflects a scale ranging from 1 to 5, including the following items: (1) If kids were drawing graffiti in your neighborhood would it be likely that the residents of the neighborhood would try to do something about it? (2) If there was a fight outside your residence and someone was beaten up, is it possible that any of your neighbors would intervene to stop it? (3) If a stranger was hanging around in your neighborhood, is it possible that any of your neighbors to do something about it? (4) If kids in your neighborhood were skipped school would it be likely that any of your neighbors would inquiry and let their parents know? The collective efficacy ranges from 1 to 5, with an average of 3.32 ( $\alpha = .76$ ).

**Neighborhood policing.** Respondents were asked to categorize their perception about neighborhood policing as very infrequently, infrequently, moderately, frequently, or very frequently. Higher value, higher perception of neighborhood policing (Mean = 3.27).

**Criminal victimization.** Criminal victimization is comprised of two estimates: violent and burglary victimization. Two questions were asked to tap victimization experience, “whether you experienced a violent crime within the 3 years preceding the survey in your *neighborhood*?” and “whether you experienced a burglary crime within the 3 years preceding the survey in your *neighborhood*.” Victimization is measured dichotomously (0 = non-victimized; 1 = victimized).

**Controls.** Some variables are included in the model as controls based on previous research. Age was measured in year intervals. Sex was measured dichotomously (female = 1, male = 0). Level of education was used as a proxy for socioeconomic status and was measured as an ordinal variable measured in levels of education completed. Personal income was measured as an ordinal variable measured in levels of personal income. Indirect victimization was indicated by whether the respondent heard about a crime event reported by households in neighboring dwellings within the 3 years preceding the survey (1 for victimized, and 0 for non-victimized). As victims might be concentrated in high-disorder areas, in line with previous literature, we controlled neighborhood education level<sup>8</sup> and robbery rate as the concentrated disadvantages. Neighborhood education level was calculated as the ratio between the number of people with bachelor’s degrees or higher and the number of inhabitants in each census neighborhood (from 2010 National Census) ( $M = .11$ ,  $SD = .17$ ). Robbery rate (per 100,000 population) was calculated for each census neighborhood in the sample by averaging official police counts of robbery for 2014 and 2015, dividing by the census neighborhood population, and multiplying by 100,000. Robbery crime events were obtained from the Guangzhou Public Security Bureau ( $M = 117.3$ ,  $SD = 320.6$ ).

### **Analytical Strategy**

A preferred approach is Hierarchical Linear Modeling (HLM) because the variance in the neighborhood level can be considered. While our data are conceptually nested, the

multilevel modeling technology does not match it. In our study, each neighborhood has only approximately 20 samples. If the average value from all respondents in each neighborhood is aggregated, it might not fully represent the neighborhood-level perceptions. Researchers have warned against the use of this approach in a small number of cases at the second level, as it may cause errors in standard error estimates (Hoffmann & Johnson, 2000; Maas & Hox, 2005; Scarborough et al., 2010). It means that the multilevel model may not be perfect for our research.

Then, as the dependent variable is ranked from low to high, both ordinal and multinomial logistic regression seem appropriate. The ordinal logistic model assumes equal distances between response categories and is appropriate when the dependent variable is measured at an ordinal level; the multinomial logistic model is typically used when the dependent variable is nominal and assumes unequal distances between response categories. Although ordinal logistic models are more succinct and therefore more favored, it is necessary to run a proportional odds assumption test to determine which model is the most appropriate. As a result, the test was significant ( $\chi^2 = 165.55$ ,  $df = .25$ ,  $p < .01$ ), which indicated that coefficients for all variables were simultaneously equal and ordinal logistic regression was inappropriate for this analysis (Fox et al., 2009; Long & Freese, 2006; Snedker, 2015). Thus, this analysis employs multinomial logistic regression.

Two different measures of the dependent variable, fear of violence and fear of burglary were estimated by multinomial logistic regression. Using individual-level data, interactions between prior victimization and four perceived neighborhood conditions on fear of crime, with controlling sociodemographic variables, were assessed. The aim is to examine whether the effects of neighborhood characteristics on fear of crime are the same for victims and non-victims. Hence, Model 1 represents the baseline model with individual-level variables and perceptions of neighborhood characteristics. Later, Model 2 is evaluated, which includes interaction terms of prior victimization and neighborhood characteristics. To avoid collinearity, interaction terms are centralized. Based on the guidance of Aiken et al. (1991), the first step is to centralize the two factors which are about to be interactively analyzed, then multiply them to get the interaction item. Thus, if several interaction items are added to the model simultaneously, it can avoid that the interaction items obscure or distort the main effect of the original factors caused by collinearity.

## Results

### *Descriptive Statistics*

The frequency distribution of dependent variables (Table 1) shows that 29.5% of the residents reported that they were “not at all” afraid of being a violent victim and 4.1% of the residents were “very” fearful of violent victimization. Approximately 19.3% of the residents reported that they were “not at all” fearful of burglary and 4.7% of the residents were “very” fearful of burglary victimization. The correlation between fear of violence and fear of burglary is .56 ( $p < .01$ ). Thus, the fear of different crime types appears to be positively correlated.

**Table 1.** Frequency Distribution of Dependent Variables by Victimization.

		Fear of violence	Fear of burglary
Categories		Samples (%)	Samples (%)
Total			
	Not at all fearful (1)	246 (29.5)	161 (19.3)
	Not very fearful (2)	204 (24.4)	243 (29.1)
	Somewhat fearful (3)	221 (26.5)	245 (29.3)
	Fearful (4)	130 (15.6)	147 (17.6)
	Very fearful (5)	34 (4.1)	39 (4.7)
	Sum	835	835
Total			
Violent victims	Not at all fearful (1)	20 (15.0)	
	Not very fearful (2)	28 (20.4)	
	Somewhat fearful (3)	34 (24.8)	
	Fearful (4)	47 (34.3)	
	Very fearful (5)	8 (5.8)	
	Sum	137	
Others	Not at all fearful (1)	226 (32.4)	
	Not very fearful (2)	176 (25.2)	
	Somewhat fearful (3)	187 (26.8)	
	Fearful (4)	83 (11.9)	
	Very fearful (5)	26 (3.7)	
	Sum	698	
Total			
Burglary victims	Not at all fearful (1)		12 (8.9)
	Not very fearful (2)		38 (28.4)
	Somewhat fearful (3)		56 (41.8)
	Fearful (4)		25 (18.7)
	Very fearful (5)		3 (2.2)
	Sum		134
Others	Not at all fearful (1)		149 (21.3)
	Not very fearful (2)		205 (29.2)
	Somewhat fearful (3)		189 (27.0)
	Fearful (4)		122 (17.4)
	Very fearful (5)		36 (5.1)
	Sum		701

For fear of violence, violent victims reported a higher level than other residents. Approximately 5.8% of violent victims reported *very fearful* compared to 3.7% of non-victimized respondents. The victimization gap is greatest for being *not at all fearful*, 15% of violent victims compared with 32.4% of others reporting. In response to fear of burglary crime, interestingly, a lower percentage of burglary victims expressed being *very fearful* (2.2%) compared to other residents (5.1%). Reasonably, a greater

percentage of other residents expressed being *not at all fearful* (21.3%) and *not very fearful* (29.2%) compared to burglary victims (8.9% and 21.3%, respectively).

Next, the present study describes the differences in reported levels of neighborhood characteristics for victims and non-victims (Table 2). In the sample of fear of violence by victimization, there was significant victimization difference in physical disorder, social disorder, and collective efficacy ( $T=3.37, p<.01$ ;  $T=-9.71, p<.01$ ;  $T=2.12, p<.05$ ; respectively). However, in the case of perceived policing in the neighborhood, victims and non-victims had similar mean scores. These pieces of evidence indicate victims and non-victims may perceive conditions differently or similarly. In the sample of fear of burglary by victimization, victims reported a significantly higher mean for social and physical disorder than non-victims ( $T=-3.29, p<.01$ ;  $T=-9.12, p<.01$ ; respectively). But there was no statistically significant difference in collective efficacy and neighborhood policing.

### ***Violent Victimization, Neighborhood Characteristics, and Fear of Violence***

Tables 3 and 4 present parameter estimates for a multinomial logistic regression of fear of violence and burglary. In the multinomial logistic regression analysis of the baseline model (Model 1, Table 3), violent victimization was a powerful variable to explain fear of violence in two cases. In comparison with *not at all fearful* (1) category, the odds of being in the *fearful* (4), and *very fearful* (5) category were significantly greater for violent victims compared to other respondents. In Model 1, the neighborhood conditions operated in the expected positive or negative direction in most cases. In line with prior research, physical and social disorder were associated with higher levels of fear of violence. Respondents who reported a higher collective efficacy in the neighborhood had lower odds when comparing the *not at all fearful* (1) to *somewhat fearful* (3) and *very fearful* (5). Although not statistically significant, reporting higher levels of neighborhood policing decreased the odds of being fear of violence. Individual-level demographic characteristics reflect that women were associated with all of the higher fear categories while age was associated with a lower fear in most categories. Indirect victimization promotes higher fear levels in the last case. Unexpectedly, the education level was associated with a higher fear when comparing the *not at all fearful* (1) to *somewhat fearful* (3).

The increase by adding all interactions between prior victimization and perceived neighborhood conditions to the baseline model reflects a significant change in the goodness of fit (log-likelihood  $\chi^2=265.15, p<.01$ ) than the baseline model with no interactions (log-likelihood  $\chi^2=241.33, p<.01$ ). Thus, results include all four interactions (Model 2, Table 3) compared to baseline (Model 1, Table 3).

A series of distinctive differences emerge when testing the interactive models. The interaction between victimization and physical disorder (Model 2, Table 3) was significant in the last two categories and indicates that the effect of physical disorder differs from violent victimization experience. Figure 1a and b show that the only

### Table 2. Descriptive Statistics.

	Sample by violent victimization						Sample by burglary victimization					
	Sample		Violent victims			Others	Burglary victims			Others		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	t-Test	Mean	SD	t-Test
Dependent variables												
Fear of violence	2.40	1.18	2.96	1.17	2.29	1.15	2.73	1.08	-6.22**	2.34	1.19	-3.78**
Fear of burglary	2.59	1.12	2.94	1.03	2.52	1.13	2.77	.93	-4.25**	2.56	1.15	-2.29*
Independent variables												
Neighborhood variables												
Physical disorder	2.95	.79	3.16	.76	2.91	.79	3.16	.74	-3.37**	2.91	.80	-3.29**
Social disorder	2.04	.81	2.68	.88	1.91	.73	2.64	.86	-9.71**	1.92	.74	-9.12**
Collective efficacy	3.32	.61	3.22	.58	3.34	.61	3.29	.54	2.121*	3.32	.62	.52
Neighborhood policing	3.27	.84	3.30	.90	3.26	.83	3.26	.87	-.48	3.27	.83	.07
Controls												
Age	43.37	15.45	41.93	15.38	43.65	15.46	41.43	15.98	1.19	43.74	15.33	1.59
Female	.56	.50	.45	.50	.58	.49	.52	.50	2.92**	.56	.50	.91
Level of education	4.43	1.59	4.43	1.56	4.43	1.60	4.37	1.58	.00	4.44	1.59	.52
Personal income	3.5	1.32	3.55	1.27	3.48	1.34	3.45	1.22	-.51	3.5	1.34	.45
Indirect victimization	.57	.50	.85	.35	.51	.50	.89	.32	-7.93**	.51	.50	-7.05**
Neighborhood education level	.11	.17	.07	.12	.11	.18	.08	.15	3.39**	.11	.17	1.77
Neighborhood robbery rate	117.3	320.6	218.6	583.6	97.4	232.7	125.6	315.7	-2.39*	115.7	321.8	-.33

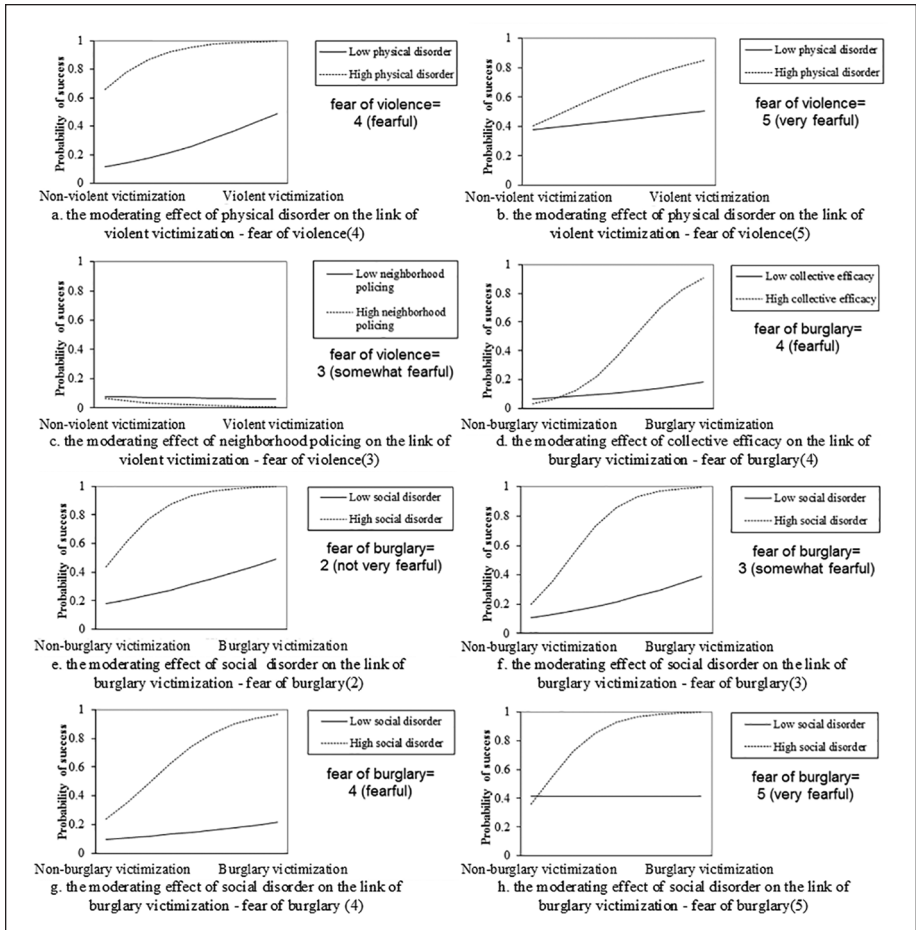
$$*p < .05. **p < .01.$$

**Table 3.** Multinomial Logistic Regression of Fear of Violence.

	2 (not very fearful)		3 (somewhat fearful)		4 (fearful)		5 (very fearful)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Victimization</b>								
Violent victimization	.174	.394	.341	.378	1.614**	1.733	1.003**	.696
Burglary victimization	.486	.486	.668*	.654*	.205	.084	-1.042	-1.134
<b>Perceived conditions</b>								
Physical disorder	.491**	.570**	.667**	.742**	.814**	.876**	.473*	.579*
Social disorder	.409*	.406*	.252	.231	.409*	.374*	.466	.367
Collective efficacy	-.292	-.368*	-.392**	-.441*	-.299	-.348	-1.205**	-1.272**
Neighborhood policing	-.142	-.142	-.187	-.201	-.185	-.269*	-.089	-.054
<b>Interactions</b>								
Physical disorder $\times$ Violent victimization		.787		.836		.951*		2.205**
Social disorder $\times$ Violent victimization		-.264		.108		.037		.128
Collective efficacy $\times$ violent victimization		-.878		-.084		-.622		-.499
Neighborhood policing $\times$ Violent victimization		.057		-.705*		.219		-.613
<b>Controls</b>								
Age	-.017*	-.016*	-.021*	-.020*	-.020*	-.020*	-.021	-.017
Female	.762**	.753*	.814**	.866**	1.519**	1.501**	1.357**	1.388*
Level of education	.045	.043	.245**	.250**	-.042	-.046	-.211	-.172
Personal income	.084	.109	-.062	-.044	.124	.155	.148	.147
Indirect victimization	-.237	-.252	-.391	-.382	.016	.021	.885*	.941*
Neighborhood education level	.622	.581	-.266	-.316	-1.112	.177	-2.973	-3.483
Neighborhood robbery rate	.000	.000	.000	.000	-.001	-.001	.000	.000
Constant	-1.049	-1.159	-.842	-.984	-2.582	-2.352	3.444	-3.54
Log likelihood	2211.1	2187.3	2211.1	2187.3	2211.1	2187.3	2211.1	2187.3

Note. 1 (not at all fearful) is the reference category. N = 835 samples.

\*p < .05. \*\*p < .01.



**Figure 1.** Moderating effects of neighborhood characteristics on the relationship between victimization and fear of crime.

existence of physical disorder was significant for both victims and non-victims, and the multiplying effect of each additional increase of physical disorder on fear of violence was greater for victims than non-victims. In the penultimate category, the inclusion of interaction terms eliminated the impact of additional units of violent victimization on the fear. The interaction between victimization and neighborhood policing (Model 2, Table 3) was significant and indicates that the effect of neighborhood policing differs by victimization experience for *somewhat fearful* (3) compared to *not at all fearful* (1). As displayed in Figure 1c, when there was a higher perceived policing in the neighborhood, the effect was greater for victims compared to non-victims in decreasing the odds of being fearful of violence.



## Burglary Victimization, Neighborhood Characteristics, and Fear of Burglary

The results are similar but with some differences for fear of burglary. The baseline model (Model 1, Table 4) shows that burglary victimization had no significant effect on fear of burglary in all categories. Gender was significant for three of four categories, and indirect victimization was significant for the last two categories. Unexpectedly, the older was significantly associated with lower fear levels in two of four cases. Turning to the ecological-level variables, similar predicting variables were statistically significant when compared to the fear of violence. The higher levels of physical and social disorder increased fear of burglary at each level except for the highest level. Collective efficacy was statistically associated with fear of burglary when comparing the *not at all fearful* (1) to *somewhat fearful* (3). And finally, the presence of high neighborhood policing reduced the worry about crime in two of four categories.

As expected, the overall impact of four interactions did improve the model fitness (Model 2: log-likelihood  $\chi^2=207.37$ ,  $p < .01$ ) compared to Model 1 (log-likelihood  $\chi^2=182.82$ ,  $p < .01$ ). This means that some of the coefficients were different for burglary victims and others. In the model of fear of burglary (Model 2, Table 4), when there was a higher social disorder in the neighborhood, the effect was greater for victims compared to non-victims in increasing the odds of being fearful in all cases (see Figure 1e–h). Interestingly, in general collective efficacy decreased the fear of burglary, but the increase of collective efficacy magnified burglary victims' fear in the *not at all fearful* (1) to *fearful* (4) comparison (Model 2, Table 4; Figure 1d). The effects of other perceived neighborhood conditions (physical disorder and neighborhood policing) on fear of burglary did not differ significantly by victimization experience.

## Discussion and Conclusions

The study analyzed the interplay between criminal victimization happened in the *neighborhood* and neighborhood characteristics for explaining fear of crime by estimating multinomial logistic regressions. Fear of violence is higher in violent victims from neighborhoods with a higher level of physical disorder, while fear of violence is lower in violent victims from neighborhoods with better perceived neighborhood policing. In the case of fear of burglary, social disorder and collective efficacy help to explain the greater levels of fear reported by burglary victims. Thus, the differential impact of multiple neighborhood conditions on fear of crime does help to explain the mechanism of the victimization-fear link.

The finding that neighborhood (physical and social) disorder has a larger impact on fear of crime by victims rather than non-victims can be in dialog with previous studies. Consistent with the case of Box et al. (1988) in England and the case of Roccato et al. (2011) in Italy, it demonstrates that direct/indirect victimization fosters the fear of crime among participants who reported high levels of social disorder in their community. However, the Seattle sample reported no differences in perception of the neighborhood risks between victims or non-victims (Rountree & Land, 1996). The different

**Table 4.** Multinomial Logistic Regression of Fear of Burglary.

	2 (not very fearful)		3 (somewhat fearful)		4 (fearful)		5 (very fearful)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Victimization								
Violent victimization	.064	-.022	.497	2.294	.694	.633*	1.094*	.951*
Burglary victimization	.331	.529	.602	.673	.003	.091	-1.145	-2.127
Perceived conditions								
Physical disorder	.350*	.330**	.603**	.596*	.678**	.677**	-.045	-.127
Social disorder	.524**	.625*	.457**	.511*	.421*	.516*	.198	.381
Collective efficacy	.084	.173	-.299*	-.253*	.052	.146	-.230	-.358
Neighborhood policing	-.259*	-.288	-.090	-.129	-.386*	-.407*	-.128	-.064
Interactions								
Physical disorder $\times$ burglary victimization		-.420		.176		.101		-.817
Social disorder $\times$ burglary victimization		1.488*		1.603**		1.201*		2.117*
Collective efficacy $\times$ burglary victimization		.996		.581		1.498*		-.913
Neighborhood policing $\times$ burglary victimization		-.417		.033		-.94		.604
Controls								
Age	-.021*	-.021*	-.012	-.013	-.023*	-.022*	-.002	-.003
Female	.976**	1.013**	.693**	.697**	1.157**	1.223**	-.043	-.010
Levels of education	.043	.050	.154	.165	.036	.038	-.070	-.068
Personal income	.165	.162	.175	.176	.053	.063	.130	.126
Indirect victimization	.119	.164	.122	.201	.578**	.619**	1.072**	1.126**
Neighborhood education level	-.947	-.931	-.1532*	-1.656**	-1.271*	-1.274*	-4.111*	-4.408*
Neighborhood robbery rate	.000	.000	.000	.000	-.001	-.001	.000	.000
Constant	-1.281	-1.727	-1.986	-2.155	-1.918	-2.485	-.655	-.724
Log likelihood	2281.7	2257.2	2281.7	2257.2	2281.7	2257.2	2281.7	2257.2

Note. 1 (not at all fearful) is the reference category. N = 835 samples.

\*p < .05. \*\*p < .01.

results may be related to the measurement and cultural background. In our study, victimization was measured based on the prior violent or burglary victimization experience in the *neighborhood*, which differs from previous studies. Our study was in a Chinese city, where the overall level of physical and social disorder is higher than that in Western cities. For instance, traffic congestion and accidents, air pollution and noise, spitting or littering (and high-rise littering), have become such astonishing problems in Guangzhou metropolis. Under such a circumstance, victimization experience is more likely to interact with neighborhood incivilities.

The reason behind why perceived conditions impact victims and non-victims differently is heterogeneous. Although both victims and non-victims rely on environmental conditions to judge certain risks, research suggests that psychological processes render vulnerable groups to be more astute observers of the surrounding precarious clues than ordinary residents in similar situations (Snedker, 2015), so disorder may awaken heightened vulnerability feelings for victims. Moreover, victims are prone to higher actual risks informed by the signal of local characteristics. The master characteristics of concentrated disadvantaged neighborhoods are the high proportion of women, low-income groups, and the high unemployment rate (Baumer et al., 2003). These vulnerable groups report higher victimization rates (Harrell et al., 2014; Jennings et al., 2007; Wang & Arnold, 2008), so victims are more likely to live in disadvantaged neighborhoods. Thus, some environmental assessments may translate into higher assessments of personal vulnerability. In addition to the living environment, victims may have a greater awareness of danger, so the victims may prefer familiar zones that can offer reassurance and protection from harm. A study confirmed that Latino adolescents who expressed greater fear of crime also reported significantly less taking part in physical activity and outdoor recreation (Shinew et al., 2013). Witnessing victimization and being personally victimized lead to avoidance behaviors, such as remaining inside the home (Shinew et al., 2013), a lower proportion of physical activity (Gray et al., 2008), and fewer days in Physical Education (PE) (Roman & Taylor, 2013). Hence, the activity space may be smaller for victims than non-victims, which may also be the reason why victims have a different perception of neighborhood environments compared to non-victims.

The moderating effect of neighborhood policing in a category of fear of violence is significant. We suggest that residents who have experienced of violent victimization can perceive the lower danger of becoming and remaining a victim in such a context. The neighborhood with high police patrolling is found to be related to decreasing the possibility of victimization (Sozer & Merlo, 2013; Triplett et al., 2003). In these neighborhoods, victims tend to be protected more. The finding that neighborhood policing buffers the association between victimization and fear of violence provides further support for the necessity of law enforcement. China appears to be doing well in this regard, although the mass of police forces can increase the financial burden of the government. However, research also demonstrates that police enforcement does not enhance the safety feelings when the residents believe that the police are unjust and impolite (Renauer, 2007). Over the past few years, China's police forces are experiencing a crisis of legitimacy and trustworthiness. The government is obsessed with

maintaining stability and relies heavily on the police to achieve this goal. Coupled with the lack of checks and balances, the police are prone to abusive behavior (Sun et al., 2013, 2017). The ability to enhance the public perception of police legitimacy and trustworthiness requires several measures.

Collective efficacy has an unexpected interaction effect in the fear of burglary model. The main effect of collective efficacy on decreased fear of burglary is significant, but the interaction effect indicates that collective efficacy enhances the fear of burglary for victims. A reasonable explanation is, with the help of social media, informal social integration enables residents to know more about the victimization experience of relatives and friends and the crime being committed in the local area (Gates & Rohe, 1987; Kanan & Pruitt, 2002), thereby making sensitive victims feel more afraid. Prior studies have also shown that victims living in communities with higher crime rates or perceived serious crime product higher fear levels (Brunton-Smith & Sturgis, 2011). Furthermore, in the Chinese context, individuals rely on *guanxi* networks for almost every aspect of life (Zhang et al., 2009), and *guanxi* partly indicates the level of collective efficacy. A well-developed *guanxi* network makes it easier for residents to obtain information about vicarious victimization information, which may lead to a higher fear level for those who have victimization experience.

We also examined the moderating effects of objective neighborhood conditions and victimization experience on fear of crime, but the results showed no significant effect, so they were not shown in the results. Since the results also show that, compared with objective neighborhood conditions, more perceived neighborhood conditions directly and significantly affect fear of crime, this non-significant moderating effect seems reasonable. In addition, the validity and reliability issues of neighborhood education level in this study have yet to be considered, other objective conditions have not been fully included, and more research is needed to verify this speculation.

Interestingly, for fear of burglary, some key predictors that explain the differences between “not at all fearful” and several “fearful” categories do not explain the gap between “not at all fearful” and “very fearful.” One possible speculation is that “very fearful” individuals (4.7%, see Table 1) are far less than those in the several “fearful” groups (“not very fearful,” 29.1%; “somewhat fearful,” 29.3%; “fearful,” 17.6%, Table 1). In this case, fewer residents in Guangzhou are likely very fearful of burglary, which may not result in some significant statistical differences.

Many theories regarding fear of crime are general, for the reason that they are proposed as theories explaining the fear of all types of crime (Yuan & McNeeley, 2017). However, the results of this study suggest that violent victimization is associated with fear of violence in more cases compared to the relationship between burglary victimization and fear of burglary. Neighborhood conditions have different effects on victims’ fear of violence compared with victims’ fear of burglary. Our finding is consistent with previous studies that serious crimes lead to higher fear of levels, indicating that serious crime is more likely to interact with the neighborhood environment (Campbell et al., 2009; Gutt & Randa, 2016; Kollerová & Smolík, 2016; Paasonen & Aaltonen, 2020).

The present research can be improved in several aspects. First, due to the data limitations, we did not consider the frequency of victimization experiences. As prior literature has shown (Brunton-Smith & Sturgis, 2011), the effect of initial victimization on fear of crime is different from that of repeat victimization. Besides, we only examined the victimization in the *neighborhood* in the past 3 years. Changes in the time and space of victimization might pose a limit to the generalizability of the results. Third, the cross-sectional nature of the study limited our understanding of the links observed. The victimization rate may vary by city and country, and the impact of the victimization may weaken over time. More data from multiple cities or multiple times remains a task for future research. Fourth, the sample size allowed us to test only a limited number of neighborhood variables. Other neighborhood characteristics such as rural-to-city migrant workers' (In Chinese, Nong Min Gong) concentration (Cheng et al., 2017; Liu, Messner et al., 2009), need to be explored further in relation to victimization experience differences. Finally, the present study used two single-item outcome measures. Although past research has indicated the reliability of self-report single-item fear of crime (Snedker, 2015; Yuan & McNeeley, 2017), it may not be entirely accurate and may limit the psychometric properties of the measure, especially in the case of self-report. To improve the fit and accuracy of the model, a multilevel approach can be used, and a series of interactions between victimization and neighborhood conditions can be added to the model in the future. Meanwhile, we explained to a certain extent the victimization—fear paradox from the perspective of perceived neighborhood environment. Future research can explore the relationship between objective neighborhood conditions (especially objective neighborhood disorder), victimization experience, and fear of crime. Using structural equation models and considering more comprehensive environmental factors can make the mechanism between victimization and fear of crime clearer. Since victimization may restrict the victims' activity space, it is also meaningful to consider the frequency of residents' visits to the specific environment and analyze the relationship between victimization and fear of crime. A higher spatiotemporal resolution measure of fear of crime and its correlates may be useful for the mentioned research.

Our research offers several suggestions for practice. First, reducing neighborhood social and physical incivilities, strengthening informal neighborhood integration and control, and improving the level of neighborhood police patrols can contribute to enhancing the safety perception of residents (regardless of whether they have victimization experience) in China. Second, Chinese policymakers may consider giving particular attention to the fear of crime among victims living in disadvantaged and disorderly neighborhoods (such as urban villages). For urban villages that often have a high victimization rate and disorderly characteristics, public policies in China should pay special attention to improving the quality of built environments, such as eliminating graffiti and reducing garbage, for crime reduction. Third, efforts to decrease violent-crime victims' fear of crime can particularly benefit from strengthening frequent police patrol and reducing physical incivilities in their neighborhood. Fourth, as a crucial cultural feature in Chinese society, while promoting collective efficacy, *guanxi* may lead to the spread of indirect victimization news, and then promote the spread of fear of crime. Thus, reducing the neighborhood crime rate might be essential to prevent collective efficacy from

magnifying fear of crime among burglary victims. Overall, the results suggest that efforts to reduce the fear of victimization among crime-specific victims might benefit from targeting both individuals and neighborhoods.

Lastly, the evidence presented by this study suggests that the effects of several neighborhood characteristics on fear of crime operate differently by victimization experience. Victims and non-victims perceive neighborhood conditions differently in urban China. These findings highlight the importance of urban environment in victimization and its links to perception of risk and vulnerability. Overall, the results suggest that efforts to reduce fear of crime among residents victimized by violence and burglary might benefit from targeting not only individuals but neighborhoods.

### Author Note

Lin Liu is now affiliated to Guangzhou University, Guangzhou, China.

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### ORCID iD

Fengrui Jing  <https://orcid.org/0000-0001-6890-0230>

### Notes

1. Also known as Chengzhongcun in Chinese, literally “village in the city,” are villages that appear in both the suburbs and the city centers of major cities.
2. It is often translated as “networks” and “relationships.” In particular, the focus is on unspoken mutual commitments, reciprocity, and trust, which are the basis of *guanxi* networks.
3. In Chinese: Wen Ding Ya Dao Yi Qie. This is the famous quote of former China’s leader Deng Xiaoping.
4. 2010 National Census is the most recent Chinese Census conducted by the National Bureau of Statistics of China.
5. Census neighborhood is the smallest administrative division unit under the current statistical scale in China, which is derived from the 2010 National Census. There are 2,643 census neighborhoods in Guangzhou.
6. Urban social area refers to the aggregation of a homogeneous population who live in a certain area, having similar living standards, lifestyles, and living statuses. People living in different social areas have different characteristics, concepts, and behaviors. Reflected spatially, social areas are homogeneous urban areas composed of several communities. As early as the 1950s, taking San Francisco as an example, some scholars began to study social areas (Shevky & Williams, 1949).

7. College students and people under the age of 18 were politely declined to participate in the survey.
8. Although neighborhood income level is an ideal factor predicting neighborhood disadvantage, no accessible neighborhood-level income data in Guangzhou. The education level in the neighborhood was used as an alternative indicator instead of neighborhood income, because it is also considered to be highly related to income, reflecting the neighborhood disadvantage.

## References

- Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE.
- Alper, M., & Chappell, A. T. (2012). Untangling fear of crime: A multi-theoretical approach to examining the causes of crime-specific fear. *Sociological Spectrum*, 32, 346–363.
- Antunes, M. J. L., & Ahlin, E. M. (2017). Youth exposure to violence in the community: Towards a theoretical framework for explaining risk and protective factors. *Aggression and Violent Behavior*, 34, 166–177.
- Baldry, A. C., & Winkel, F. W. (2003). Direct and vicarious victimization at school and at home as risk factors for suicidal cognition among Italian adolescents. *Journal of Adolescence*, 26(6), 703–716.
- Baumer, E., Horney, J., Felson, R., & Lauritsen, J. L. (2003). Neighborhood disadvantage and the nature of violence. *Criminology*, 41(1), 39–72.
- Bowling, N. A., Beehr, T. A., Bennett, M. M., & Watson, C. P. (2010). Target personality and workplace victimization: A prospective analysis. *Work and Stress*, 24(2), 140–158.
- Box, S., Hale, C., & Andrews, G. (1988). Explaining fear of crime. *The British Journal of Criminology*, 28(3), 340–356.
- Brunton-Smith, I., & Sturgis, P. (2011). Do neighborhoods generate fear of crime? An empirical test using the British Crime Survey. *Criminology*, 49(2), 331–369.
- Campbell, R., Dworkin, E., & Cabral, G. (2009). An ecological model of the impact of sexual assault on women's mental health. *Trauma Violence & Abuse*, 10(3), 225–246.
- Cao, L. (2007). Returning to normality: Anomie and crime in China. *International Journal of Offender Therapy and Comparative Criminology*, 51(1), 40–51.
- Cheng, J., Liu, J., & Wang, J. (2017). Domestic migration, home rentals, and crime rates in China. *The Journal of Chinese Sociology*, 4(1), 8.
- Crowl, J. N. (2017). The effect of community policing on fear and crime reduction, police legitimacy and job satisfaction: An empirical review of the evidence. *Police Practice and Research*, 18(5), 449–462.
- Elmas, M. S. (2021). Perceived risk of terrorism, indirect victimization, and individual-level determinants of fear of terrorism. *Security Journal*, 34, 498–524.
- Ferguson, K. M., & Mindel, C. H. (2007). Modeling fear of crime in Dallas neighborhoods: A test of social capital theory. *Crime and Delinquency*, 53(2), 322–349.
- Ferraro, K. F. (1995). *Fear of crime: Interpreting victimization risk*. SUNY press.
- Ferraro, K. F. (1996). Women's fear of victimization: Shadow of sexual assault? *Social Forces*, 75(2), 667–690.
- Fox, K. A., Nobles, M. R., & Piquero, A. R. (2009). Gender, crime victimization and fear of crime. *Security Journal*, 22(1), 24–39.
- Franklin, T. W., Franklin, C. A., & Fearn, N. E. (2008). A multilevel analysis of the vulnerability, disorder, and social integration models of fear of crime. *Social Justice Research*, 21(2), 204–227.



- Gabriel, U., & Greve, W. (2003). The psychology of fear of crime. Conceptual and methodological perspectives. *The British Journal of Criminology*, 43(3), 600–614.
- Gates, L. B., & Rohe, W. M. (1987). Fear and reactions to crime: A revised model. *Urban Affairs Quarterly*, 22(3), 425–453.
- Gray, E., Jackson, J., & Farrall, S. (2006). *Reassessing the fear of crime: Frequencies and correlates of old and new measures* (Experience & Expression in the Fear of Crime Working Paper 3). SSRN.
- Gray, W. N., Janicke, D. M., Ingerski, L. M., & Silverstein, J. H. (2008). The impact of peer victimization, parent distress and child depression on barrier formation and physical activity in overweight youth. *Journal of Developmental & Behavioral Pediatrics*, 29(1), 26–33.
- Grubb, J. A., & Bouffard, L. A. (2015). The influence of direct and indirect juvenile victimization experiences on adult victimization and fear of crime. *Journal of Interpersonal Violence*, 30(18), 3151–3173.
- Gutt, T. A., & Randa, R. (2016). The influence of an empathetic adult on the relationship between bullying victimization and fear at school. *Journal of Crime and Justice*, 39(2), 282–302.
- Hanslmaier, M. (2013). Crime, fear and subjective well-being: How victimization and street crime affect fear and life satisfaction. *European Journal of Criminology*, 10(5), 515–533.
- Harrell, E., Langton, L., Berzofsky, M., Couzens, L., & Smiley-McDonald, H. (2014). *Household poverty and nonfatal violent victimization, 2008–2012*. US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Helfgott, J. B., Parkin, W. S., Fisher, C., & Diaz, A. (2020). Misdemeanor arrests and community perceptions of fear of crime in Seattle. *Criminal Justice Journal*, 69, 101695.
- Hoffmann, J. P., & Johnson, R. A. (2000). Multilevel influences on school disorder: A comment on Welsh, Greene and Jenkins. *Criminology*, 38(4), 1275–1288.
- Hough, M., & Mayhew, P. (1983). *The British crime survey: first report* (No. 76). HM Stationery Office.
- Jennings, W. G., Gover, A. R., & Pudrzenska, D. (2007). Are institutions of higher learning safe? A descriptive study of campus safety issues and self-reported campus victimization among male and female college students. *Journal of Criminal Justice Education*, 18(2), 191–208.
- Jing, F., Liu, L., Zhou, S., & Song, G. (2020). Examining the relationship between Hukou status, perceived neighborhood conditions, and Fear of crime in Guangzhou, China. *Sustainability*, 12(22), 9614.
- Kanan, J. W., & Pruitt, M. V. (2002). Modeling fear of crime and perceived victimization risk: The (In)significance of neighborhood integration. *Sociological Inquiry*, 72(4), 527–548.
- Katzner, C., Fetchenhauer, D., & Belschak, F. (2009). Cyberbullying: Who are the victims? A comparison of victimization in internet chatrooms and victimization in school. *Journal of Media Psychology*, 21(1), 25–36.
- Kelling, G. L., & Wilson, J. Q. (1982). Broken windows. *Atlantic Monthly*, 249(3), 29–38.
- Kollerová, L., & Smolík, F. (2016). Victimization and its associations with peer rejection and fear of victimization: Moderating effects of individual-level and classroom-level characteristics. *British Journal of Educational Psychology*, 86(4), 640–656.
- Kuther, T. L., & Fisher, C. B. (1998). Victimization by community violence in young adolescents from a suburban city. *The Journal of Early Adolescence*, 18(1), 53–76.
- LaGRANGE, R. L., Ferraro, K. F., & Supancic, M. (1992). Perceived risk and fear of crime: Role of social and physical incivilities. *Journal of Research in Crime and Delinquency*, 29(3), 311–334.

- Lane, J., & Fox, K. A. (2013). Fear of property, violent, and gang crime: Examining the shadow of sexual assault thesis among male and female offenders. *Criminal Justice and Behavior*, 40, 472–496.
- Lee, H. D., Reyns, B. W., Kim, D., & Maher, C. (2020). Fear of crime out west: Determinants of fear of property and violent crime in five states. *International Journal of Offender Therapy and Comparative Criminology*, 64(12), 1299–1316.
- Liu, J., Messner, S., Zhang, L., & Zhuo, Y. (2008). Investigating production mechanism of Fear of crime in urban Chinese communities: Role of social disorder. *Crime and Criminal Justice International*, 11, 27–61.
- Liu, J., Messner, S. F., Zhang, L., & Zhuo, Y. (2009). Socio-demographic correlates of fear of crime and the social context of contemporary urban China. *American Journal of Community Psychology*, 44(1-2), 93–108.
- Liu, Y., Zhang, F., Wu, F., Liu, Y., & Li, Z. (2017). The subjective wellbeing of migrants in Guangzhou, China: The impacts of the social and physical environment. *Cities*, 60, 333–342.
- Long, J. S., & Freese, J. (2006). *Regression models for categorical dependent variables using Stata*. Stata press.
- Lynch, J. P., & Cantor, D. (1992). Ecological and behavioral influences on property victimization at home: Implications for opportunity theory. *Journal of Research in Crime and Delinquency*, 29(3), 335–362.
- Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 86–92.
- Mesch, G. S. (2000). Perceptions of risk, lifestyle activities, and fear of crime. *Deviant Behavior*, 21(1), 47–62.
- Niu, P. (2019). *Policy-making and deliberation in urban village regeneration in China* (Doctoral Dissertation). University of Sheffield.
- Noble, J., & Jardin, A. (2020). From victimization to fear: Fear of crime and its variations among victims. *The British Journal of Criminology*, 60(2), 468–489.
- Paasonen, J., & Aaltonen, M. (2020). Violent victimization, fear of crime, and experiences of criminal justice processes among security personnel in Finland: Evidence from survey data. *Journal of Contemporary Criminal Justice*, 36(1), 161–172.
- Qin, N., & Yan, E. (2018). Common crime and domestic violence victimization of older Chinese in urban China: The prevalence and its impact on mental health and constrained behavior. *Journal of Interpersonal Violence*, 33(6), 889–914.
- Renauer, B. C. (2007). Reducing fear of crime: Citizen, police, or government responsibility? *Police Quarterly*, 10(1), 41–62.
- Roccatto, M., Russo, S., & Vieno, A. (2011). Perceived community disorder moderates the relation between victimization and fear of crime. *Journal of Community Psychology*, 39(7), 884–888.
- Roman, C. G., & Taylor, C. J. (2013). A multilevel assessment of school climate, bullying victimization, and physical activity. *Journal of School Health*, 83(6), 400–407.
- Rountree, P. W., & Land, K. C. (1996). Burglary victimization, perceptions of crime risk, and routine activities: A multilevel analysis across Seattle neighborhoods and census tracts. *Journal of Research in Crime and Delinquency*, 33(2), 147–180.
- Rühs, F., Greve, W., & Kappes, C. (2017). Coping with criminal victimization and fear of crime: The protective role of accommodative self-regulation. *Legal and Criminological Psychology*, 22(2), 359–377.
- Scarborough, B. K., Like-Haislip, T. Z., Novak, K. J., Lucas, W. L., & Alarid, L. F. (2010). Assessing the relationship between individual characteristics, neighborhood context, and fear of crime. *Criminal Justice Journal*, 38(4), 819–826.

- Shevky, E., & Williams, M. (1949). *The social areas of Los Angeles: Analysis and typology*. University of California Press.
- Shinew, K. J., Stodolska, M., Roman, C. G., & Yahner, J. (2013). Crime, physical activity and outdoor recreation among Latino adolescents in Chicago. *Preventive Medicine*, 57(5), 541–544.
- Skogan, W. (1986). Fear of crime and neighborhood change. *Crime and Justice*, 8, 203–229.
- Smith, L. N., & Hill, G. D. (1991). Victimization and fear of crime. *Criminal Justice and Behavior*, 18(2), 217–239.
- Snedker, K. A. (2015). Neighborhood conditions and fear of crime: A reconsideration of sex differences. *Crime and Delinquency*, 61(1), 45–70.
- Sozer, M. A., & Merlo, A. V. (2013). The impact of community policing on crime rates: Does the effect of community policing differ in large and small law enforcement agencies? *Police Practice and Research*, 14(6), 506–521.
- Sun, I. Y., Wu, Y., & Hu, R. (2013). Public assessments of the police in rural and urban China: A theoretical extension and empirical investigation. *The British Journal of Criminology*, 53(4), 643–664.
- Sun, I. Y., Wu, Y., Hu, R., & Farmer, A. K. (2017). Procedural justice, legitimacy, and public cooperation with police: Does western wisdom hold in China? *Journal of Research in Crime and Delinquency*, 54(4), 454–478.
- Tomsich, E. A., Gover, A. R., & Jennings, W. G. (2011). Examining the role of gender in the prevalence of campus victimization, perceptions of fear and risk of crime, and the use of constrained behaviors among college students attending a large urban university. *Journal of Criminal Justice Education*, 22(2), 181–202.
- Triplett, R. A., Gainey, R. R., & Sun, I. Y. (2003). Institutional strength, social control and neighborhood crime rates. *Theoretical Criminology*, 7(4), 439–467.
- Tseloni, A., & Zarafonitou, C. (2008). Fear of crime and victimization: A multivariate multilevel analysis of competing measurements. *European Journal of Criminology*, 5(4), 387–409.
- Volker, B. (2017). Revisiting broken windows: The role of neighborhood and individual characteristics in reaction to disorder cues. *Sociological Science*, 4, 528–551.
- Wang, F. (2020). Influence of neighborhood ties on sense of security of community residents: Empirical analysis based on CGSS 2015. *Journal of Yibin University*, 20(4), 37–45. In Chinese.
- Wang, F., & Arnold, M. T. (2008). Localized income inequality, concentrated disadvantage and homicide. *Applied Geography*, 28(4), 259–270.
- Wu, F. (2012). Neighborhood attachment, social participation, and willingness to stay in China's low-income communities. *Urban Affairs Review*, 48(4), 547–570.
- Wu, Y., Li, F., Triplett, R. A., & Sun, I. Y. (2019). Media consumption and Fear of crime in a large Chinese city. *Social Science Quarterly*, 100(6), 2337–2350.
- Yan, E., & Qin, N. (2014). Prevalence and psychosocial correlates of the fear of crime in older Chinese. *The Journal of Adult Protection*, 16(5), 264–275.
- Yuan, Y., & McNeeley, S. (2017). Social ties, collective efficacy, and crime-specific fear in Seattle neighborhoods. *Victims & Offenders*, 12(1), 90–112.
- Zhang, H., & Zhao, R. (2018). Empirical research on domestic violence in contemporary China: Continuity and advances. *International Journal of Offender Therapy and Comparative Criminology*, 62(16), 4879–4887.
- Zhang, L., Messner, S. F., & Liu, J. (2007). Bicycle-theft victimization in contemporary urban China: A multilevel assessment of risk and protective factors. *Journal of Research in Crime and Delinquency*, 44(4), 406–426.

- Zhang, L., Messner, S. F., Liu, J., & Zhuo, Y. A. (2009). Guanxi and fear of crime in contemporary urban China. *The British Journal of Criminology*, 49(4), 472–490.
- Zhao, B. (2008). New generation migrant workers' participation in volunteer services. *Youth Studies*, 2008(5), 23–26.
- Zhong, L. Y. (2010). Bystander intervention and fear of crime: Evidence from two Chinese communities. *International Journal of Offender Therapy and Comparative Criminology*, 54(2), 250–263.
- Zhou, J., & Yin. (2020). The effect of urbanization on fear of crime. *Urban Development Studies*, 27(4), 14–20. In Chinese.
- Zhou, X., & Qi, Y. (2019). The impact of the public confidence in the police on fear of crime: An empirical study based on ordinary logistic regression. *Journal of People's Public Security University of China (Social Sciences Edition)*, 35(1), 128–135. In Chinese.