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A MULTILEVEL ANALYSIS OF THE RISK OF HOUSEHOLD BURGLARY IN THE CITY OF TIANJIN, CHINA

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This study applies the integrated, multilevel framework developed in the West to explain variation in the risk of household burglary within the city of Tianjin, China. The analytic framework consists of three sets of determinants: household variables, neighbourhood structural factors, and neighbourhood social control processes. The selection of variables is guided by routine activities/lifestyle theories and the social disorganization perspective, adapted to reflect features of urban China. The results of multilevel regression modeling reveal that indicators of target attractiveness (household income) and guardianship (length of residence and 'somebody home') exhibit the predicted effects on the risk of household burglary. Similarly, the effects of two of the neighbourhood process variables—collective efficacy and public control—conform to theoretical expectations and findings in Western research. The results for the neighbourhood structural factors are inconsistent with those widely reported in the West. These analyses demonstrate the applicability of elements of Western criminological theory to contemporary urban China but also reveal important differences in the ecological dynamics of crime across contexts.

Introduction

Pre-reform China enjoyed very low crime rates and had earned a reputation of being a 'crime free' society (Fairbank 1987; Rojek 1996). According to official statistics, China had only five to six criminal cases per 100,000 inhabitants annually during the 1950s and 1960s (Dai 2001). Since the nation implemented economic reform and an open-door policy in the late 1970s, crime has been on the increase (Dai 1995; Deng and Cordilia 1999; Liu and Messner 2001; Rojek 1996). The nation's total crime rate climbed to 288.68 per 100,000 inhabitants in 2000—a figure that is approximately 50 times the rates observed in the 1950s and 1960s (United Nations Office on Drugs and Crime 2001).

Burglaries, after thefts, have become the second largest category of offences recorded in the police statistics (United Nations Office on Drugs and Crime 2001). Data from the International Criminal Police Organization (INTERPOL 1997) indicate that the burglary rate ('breaking and entering') in China was 19.35 per 100,000 inhabitants in 1997. In 2000, the rate increased to 91.25 per 100,000 inhabitants (United Nations Office on Drugs and Crime 2001).[1] Unfortunately, empirical analyses of household burglary in China are for the most part lacking because the study of crime has traditionally been

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[1] Although crime rates in China are still relatively low when compared internationally (Bakken 2005), current levels stand in stark contrast to those in the pre-reform era, and crime is widely regarded as a serious social problem by the Chinese public and Chinese scholars (Feng 2001).

located in law schools, and the focus of inquiry has been theoretical and philosophical issues rather than empirical research (Zhou and Cong 2001).

The purpose of the present paper is to examine predictors of the risk of household burglary in contemporary urban China using data from a recent survey conducted in the city of Tianjin. A distinctive feature of our dataset is that it allows us to assess the effects of both household-level and neighbourhood-level variables. Consistent with Western research, our selection of household-level variables is informed by routine activities/lifestyle theories, while the selection of neighbourhood-level variables is informed by the social disorganization perspective (Rountree and Land 2000; Trickett *et al.* 1995), adapted to reflect socio-political arrangements in China. We thus attempt to gain a better understanding of the social factors underlying burglary in Chinese cities by importing and adapting the integrated, multilevel framework that has proven to be highly useful in Western research.

Theory and Previous Research in the West

As Rountree and Land (2000: 286) observe, recent studies of burglary in Western nations have abandoned an exclusive focus on either micro- or macro-level processes and have instead adopted a multilevel framework. This framework integrates insights from routine activities/lifestyle theories, which emphasize the importance of criminal opportunities, and social disorganization theory, which highlights social control associated with the ecological context (Miethe and McDowall 1993; Miethe and Meier 1994). The technique of hierarchical linear modeling (HLM) has emerged as the preferred statistical tool for applying the multilevel framework because it facilitates the identification of the effects of variables and sources of variation at both the household and neighbourhood levels of analysis (Rountree *et al.* 1994; Rountree and Land 2000).

In the classic formulation of routine activities/lifestyle theories, victimization risk is determined by the likelihood that motivated offenders, suitable targets and the absence of capable guardians converge in space and time (Cohen and Felson 1979; Hindelang *et al.* 1978). Everyday activities affect the likelihood of this convergence, thereby influencing victimization risk. These theories have been applied to both personal and household victimization. With respect to household crimes such as burglary, victimization has been linked to 'target attractiveness', 'guardianship' and 'target exposure' (Tseloni *et al.* 2004).

Target attractiveness refers to the value of property in the household. It has commonly been operationalized in terms of the presence of expensive consumer goods or the income of household members. Guardianship, which has been differentiated into 'social' and 'physical' domains, refers to the capacity to protect the household from victimization. Social guardianship derives from the surveillance activities of persons. It has been measured with variables such as the presence of household members at home or having neighbours look over the household when residents are away. Physical guardianship refers to devices that offer protection, such as locked doors, alarms and window gates. Finally, target exposure refers to the accessibility of households to offenders, as reflected in features of housing structure and design.

Social disorganization theory complements the routine activities/lifestyle perspectives by identifying features of the neighbourhood context that affect victimization risk.

The early research associated with the Chicago School focused mainly on structural conditions of neighbourhoods that are likely to be criminogenic, such as high levels of poverty, residential instability and ethnic heterogeneity (Shaw and McKay 1942; see Kornhauser 1978). More recent work in the 'neighborhood effects' tradition has explicated more fully the social processes that intervene between the theoretically specified structural features of neighbourhoods and crime.

As Sampson *et al.* (2002) observe, these intervening processes can be organized into three general types. One entails social ties/interaction. Specific dimensions include the level and density of ties and the frequency of interaction among neighbours. A second type of intervening mechanism is collective efficacy. This encompasses the degree of mutual trust, shared expectations for informal social control and social cohesion. A third intervening mechanism involves institutional resources. Following the lead of the classical social disorganization theorists, much of the research on neighbourhood crime has emphasized *informal* mechanisms of social control when studying intervening processes. However, several studies have affirmed the importance of public control outside neighbourhoods, and especially the capacity to secure law-enforcement services (Bursik and Grasmick 1993; Carr 2003; Velez 2001).

Western research has demonstrated the utility of the integrated multilevel framework for explaining household burglary. Using data from a multistage sample of residents in Seattle, Miethe and McDowall (1993) report effects of both household and neighbourhood characteristics that are consistent with expectations. The observed relationships between burglary and indicators of guardianship (home unoccupied, safety precautions) and target attractiveness (family income, presence of expensive goods) conform to predictions based on the lifestyles/routine activities perspectives. At the neighbourhood level, poor socio-economic conditions are associated with burglary, consistent with social disorganization theory. Miethe and McDowall also observe that features of neighbourhood context moderate the effects of some household characteristics on burglary rates.

Rountree *et al.* (1994) have replicated Miethe and McDowall's analyses using hierarchical linear modeling. They once again find strong direct effects of busy places, ethnic heterogeneity and neighbourhood disorder on household burglary rate when the effects of individual and household-level variables are held constant. At a general level, they conclude that the basic premises of the integrated, multilevel framework 'are soundly affirmed' by their analyses (Rountree *et al.* 1994: 410).

In a subsequent study, Rountree and Land (2000) extend their earlier work to assess the generalizability of relationships from multilevel models of household burglary across three US cities—Rochester, St Louis and Tampa–St Petersburg—using data from the Police Services Study. They report that the risk of burglary varies significantly across neighbourhoods in all cities and that the variation is largely accounted for by neighbourhood-level covariates. They also observe that the confidence intervals for the coefficients of predictors overlap, suggesting that multilevel models apply similarly across diverse settings.

Using the same dataset, Velez (2001) goes beyond prior work by introducing measures of 'public' control into the multilevel victimization research. She argues that studies of community policing and studies of neighbourhood mobilization imply that the capacity of residents to establish linkages with the local government and the police affects crime control. She reports that her measure of public control exhibits

the predicted negative effect on burglary—an effect that is stronger in disadvantaged communities. Velez also finds that measures of neighbourhood disadvantage and racial/ethnic heterogeneity exhibit positive effects on burglary that are statistically interpreted by the indicators of community social control.

The integrated, multilevel victimization research has thus greatly expanded knowledge about how aspects of routine activities/lifestyles and neighbourhood ecological context affect risks of burglary. However, the geographic coverage of these studies has been severely limited. This is especially the case for research that attempts to examine not only structural conditions of neighbourhoods, but intervening processes as well. Measures of socio-demographic characteristics of residents in administrative jurisdictions are typically available in census sources. In contrast, information relevant to intervening neighbourhood-level processes must be obtained through other means, usually through surveys. Moreover, these surveys must be based on a sampling design that yields an appreciable number of 'informants' distributed across a sufficient number of neighbourhoods to permit multivariate statistical analyses of measures aggregated to the neighbourhood level.

Because these data requirements are so demanding, the multilevel victimization research that examines neighbourhood processes has been limited to a few Western nations (Bernasco and Luykx 2003; Sampson *et al.* 2002; Tseloni and Farrell 2002), leading Sampson (2006: 162) to observe that the 'application of neighborhood studies to other societal contexts is badly needed if we are to make further progress in understanding the generalizability of the link between community social mechanisms and crime rates'. The Tianjin survey described below contains information on both neighbourhood structural conditions and neighbourhood social control processes, along with a range of theoretically relevant household measures. It thus offers a unique opportunity to apply the integrated multilevel victimization framework to the case of contemporary urban China.

Urban China as an Analytic Setting

Over the course of the past few decades, China has embarked upon a bold project of economic reform. The rigid state controls over the economy established after the Communist Revolution have been relaxed, and market mechanisms have been encouraged. This economic reform has been remarkably successful in stimulating economic growth. China's Gross Domestic Product (GDP) increased by an average of over 9 per cent annually from 1990 to 2005 (China Statistical Yearbooks 1990–2005).

The economic reform has resulted in profound changes in the social structure in general and in the landscape of cities in particular. Pre-reform China was one of the most egalitarian developing countries in the world (Parish 1981; Whyte and Parish 1984: 44). Mao's policies fostered a stratification system with minimal socio-economic inequalities. In contrast with the sharp residential segregation along racial and socio-economic lines in the United States and other Western countries, urban China's neighbourhood differentiation was modest (Zhang and Deng 1998). As economic reforms have been implemented, the driving force of a market economy has become increasingly prominent, and new forms of urban neighbourhood differentiation have emerged.

Two developments have been particularly consequential for urban ecology: growing economic inequality and the creation of a large migrant population from rural areas. With respect to inequality, a new economic elite has emerged consisting of business owners and high-ranking managers in private and joint venture enterprises (Ding 2000; Duckett 2001; Nee 1992; Nee and Su 1998). These well-off business people are able to purchase expensive houses with many amenities in newly constructed neighbourhoods (Logan and Bian 1993). The residential moves of the new economic elite, along with the old political elite, have made neighbourhoods much more diverse in Chinese cities than they were in the pre-reform era. At the same time, 'a new urban poverty stratum is emerging from laid off and retired labor' (Bian 2002: 96). Thus, neighbourhoods of 'concentrated affluence' and 'concentrated poverty' that are somewhat analogous to those in US cities appear to be forming in urban China.

A second development with profound implications for urban ecology involves the breaking down of the dual system of citizenship, which was implemented after the Communists assumed power. Rural citizens usually could not become urban citizens. The control mechanism was the registration system referred to as *hukou*. Each urban citizen had a registration card that was held by a neighbourhood police station (Cheng and Selden 1994; Solinger 1999). This system limited population mobility from rural to urban areas and contributed to social control in urban areas. However, economic reform has placed great pressure on the *hukou* system due to the large labour surplus in rural areas and the need for more labour in the growing cities (Oi 1999). In response, the Chinese authorities have loosened restrictions on mobility. The result has been the movement of a large number of rural residents to cities (Keister and Nee 2000; Ma 2001). This so-called 'floating population' (*Liu Dong Ren Kou*) has significantly changed the character of selected urban areas, and there has been growing concern over poverty and crime in neighbourhoods where rural migrants are concentrated (Situ and Liu 1996; Solinger 1999).

Along with these changes, urban residents have expressed increasing concern about their safety (Tang and Parish 2000). Many households, especially wealthy households, have adopted security measures, such as installing anti-theft doors, and have exercised greater precautions than were typical in the past. In addition, as economic conditions and living standards have improved, Chinese households have more valuables that are attractive to offenders.

In sum, the homogeneous structure of Chinese cities in the past has been transformed. The urban landscape is more diverse and differentiated. Neighbourhoods vary along some of the structural dimensions long considered criminogenic by social disorganization theory. Poor neighbourhoods are juxtaposed with affluent neighbourhoods; housing growth has stimulated residential mobility; the population is more heterogeneous, as large numbers of rural migrants settle in the cities. These developments suggest that the risk of household burglary is not likely to be uniform across areas but rather is ecologically structured. At the same time, affluence has created households that contain valuable property that make them attractive targets for burglary, while a growing awareness of threats to safety has encouraged guardianship activities, especially among those who can afford them. It thus seems likely that insights of routine activities/lifestyle and social disorganization theories will be useful for understanding variation in burglary risks in contemporary urban China.

Current Study

We have three sets of predictors of burglary in our application of the multilevel victimization framework: household variables, neighbourhood structural factors and neighbourhood 'process' predictors representing three forms of neighbourhood social control. Drawing upon the routine activities/lifestyle research, the household variables reflect 'target attractiveness', 'guardianship' and 'target exposure'. Variables for family income and household valuables capture target attractiveness. Guardianship variables include length of residence (long-term residents presumably have more extensive social ties with neighbours who can exercise surveillance), someone often being home, having neighbours watch over the household when residents are away, locking doors when away and having an anti-theft door. Target exposure is captured by a variable reflecting the lingering presence of a traditional form of housing in China: 'row houses'.

Row houses (*Ping Fang*) are single-storey buildings with a shared courtyard. They have entry points on the ground level, which makes them more accessible to potential burglars than elevated structures (see Tseloni *et al.* 2004: 73). Also, row houses usually have poor physical conditions due to long years of residency. Potential offenders may be able to break into these houses more easily than newly developed apartment buildings, which have more security features. In the past, row houses were the dominant type of housing in urban China. The housing stock has been changing since the 1980s. Many row houses have been demolished and replaced by high-rise apartment buildings, but row houses have not disappeared entirely. Residence in a row-house complex thus serves as an indicator target exposure.[2] We hypothesize that indicators of household attractiveness and exposure are positively related to the risk of household burglary, while measures of household guardianship are negatively associated with burglary risk.

Our second set of variables comprises neighbourhood structural factors. The selection of these variables is informed by social disorganization theory. In the work of the classic Chicago school, residential stability, population heterogeneity and poverty are highlighted as structural conditions conducive to social disorganization and crime (Sampson and Groves 1989). The more recent work that has attended to both neighbourhood 'structure' and neighbour 'process' follows in this general tradition (e.g. Sampson *et al.* 1997). One of the structural conditions considered in studies applying the social disorganization perspective has a straightforward analogue in the Chinese context—neighbourhood poverty level. Accordingly, we hypothesize that neighbourhood poverty is positively related to the risk of burglary, net of the household-level variable for income.[3]

The other two structural conditions—residential stability and population heterogeneity—take on distinctive forms in urban China. Before the economic reform, poor housing

[2] The conceptualization of 'row house' as an indicator of target exposure is complicated because the residents of row houses typically form close relationships. These social relationships imply high guardianship via neighbours' surveillance. As noted, we include a direct indicator of neighbours' surveillance of the household, along with a measure of length of residence, in an effort to capture guardianship. Thus, the net effect of row houses is interpreted as a 'target exposure' effect.

[3] The joint prediction of a positive effect of income at the household level on burglary risk and a positive effect of poverty at the neighbourhood level is paradoxical. The paradox reflects the differential emphasis on 'target attractiveness' and 'lack of guardianship' associated with routine activities theory and social disorganization theory, respectively. From the vantage point of routine activities theory, household income indicates opportunities for a high yield from successful burglary. From the vantage point of social disorganization theory, poor socio-economic conditions in the neighbourhood imply weak informal control and lack of guardianship (see Miethe and Meier 1994).

conditions were widespread in Chinese cities. Many urban residents had houses with limited living space, except for the political elite. Following the implementation of the economic reform, new housing projects have been built to improve the urban residents' living arrangements. As a result, urban families are generally eager to move to newer, better houses. The opportunity to move depends on economic, political and social resources.

These observations suggest that residential stability or mobility in urban China entails a mix of conditions with different consequences for crime control. To the extent that stability fosters social cohesion, crime is likely to be reduced. However, newly developed houses usually have better security measures, and their residents are more able to secure a variety of resources for their neighbourhoods. Therefore, the effect of residential stability may not operate in the way that has been found in the West.[4] The effect of residential stability on burglary may be negative, reflecting enhanced social cohesion, positive, reflecting the disadvantages associated with traditional neighbourhoods, or null, reflecting countervailing influences. We accordingly advance no hypothesis about the effect of residential stability on burglary.

The remaining structural variable commonly included in social disorganization research—population heterogeneity—also needs to be adapted to the Chinese context. The population in Tianjin is homogeneous racially and ethnically, and there is little immigration from foreign lands. 'Racial/ethnic' heterogeneity is therefore not relevant. On the other hand, the character of Chinese cities has changed in recent years due to the development of migrant enclaves. Members of the 'floating population' typically have few ties to the local community, and they are, in many respects, outsiders. Rural migrants thus generate population heterogeneity in urban China in a manner that is potentially analogous to racial/ethnic heterogeneity in the Western case. We thus hypothesize that an indicator of rural migrant concentration is positively related to the risk of burglary.

We draw upon the recent work on neighbourhood 'process' variables in the selection of our third set of variables, which includes three forms of neighbourhood social control—collective efficacy, semi-public control and public control (Bursik and Grasmick 1993; Carr 2003; Sampson *et al.* 1997; Velez 2001). Applying Western research on the impact of neighbourhood control processes on burglary, however, also requires sensitivity to the Chinese context.

Consider the influential concept of 'collective efficacy'—strong social cohesion among neighbours combined with a willingness to intervene when public order is threatened (Sampson *et al.* 1997; 2002). The harnessing of social cohesion among neighbours for purposes of securing public safety would seem to be relevant to crime control in China just as in the West. However, the institutional underpinnings of collective efficacy are different in the Chinese case. A distinguishing feature of this form of social control in the West is its voluntary character and its grounding in civil society. Although neighbours may collectively avail themselves of governmental agencies, including the police,

[4] In a multilevel analysis of delinquency in Taipei, Taiwan, Yang and Hoffmann (1998) advance a similar interpretation to explain an unexpected finding for residential mobility. Administrative districts low in mobility exhibit a greater amount of delinquency. They note that 'transfer opportunities are much more common among the well off in Taiwan' (1998: 236) and suggest that their measure of mobility may reflect features of socioeconomic status that are related to crime but are not captured in their measure of community-level income.

neighbours themselves typically assume the leading role. Following classical social disorganization theory, collective efficacy in the West is characteristically 'informal' social control. The situation in China is more complex because the state plays a more prominent role in orchestrating the process, and the lines between 'informal' and state-initiated social control are blurred.

The Chinese Communists built a political system in urban areas that entails the penetration of the government into local communities (Whyte and Parish 1984; Tang and Parish 2000). The system has a top-down hierarchical structure of administration consisting of city governments, district governments and City-Street offices (*Jie Ban Shi Chu*), along with the leadership of a Communist Party Committee at each level of administration. City-Street offices are the grassroots-level governmental agencies. Each City-Street office has authority over a number of neighbourhoods, which are organized according to neighbourhood (or residents') committees (*Ju Wei Hui*). A neighbourhood committee is a quasi-official agency that deals with daily affairs such as mediating disputes and conflicts between residents and taking care of family needs. The City-Street office appointed members of neighbourhood committees in the past, but now they are likely to be elected by residents. They receive a small stipend from the City-Street office. The City-Street office directs the day-to-day operations of neighbourhood committees. The operations of neighbourhood committees represent a kind of semi-public (official) control at the neighbourhood level. These committees are mass-based and supported by the Chinese governments.

The social changes instigated by the transition to a market economy have put strains on the system of neighbourhood committees. For example, it has become more difficult to recruit residents to serve, especially younger residents (Tang and Parish 2000). In response to this challenge, Chinese authorities have made concerted efforts to strengthen the operation of neighbourhood committees because they realize their importance for preserving the stability of urban areas and for implementing governmental control. One such effort has been to codify in formal law the existence and operation of neighbourhood committees. For example, neighbourhood committees were written in the 1982 China Constitution. Subsequently, the Standing Committee of Chinese National Congress passed the Organization Law of Neighborhood Committees in 1989, which defines the organization of neighbourhood committees, their functions, duties, resources and relationships with local governments. There were 77,000 neighbourhood committees nationwide in 2003.

Parallel to the City-Street office is another official agency at the neighbourhood level—the neighbourhood police station (*Pai Chu Suo*). Western cities also have local police stations, but the police are not integrated into the community in the way that they are in urban China. The neighbourhood police station is the grass-roots agency of the Chinese police organization (see Li 1998). The neighbourhood police station has a close relationship with the City-Street office and the neighbourhood committee. Police officers in a neighbourhood police station engage in a distinctively Chinese style of 'community policing'. They frequently visit neighbourhoods that are under their jurisdiction, meet residents on a regular basis and solve a wide range of problems including (but not limited to) crimes that have occurred in neighbourhoods. They assist the work of neighbourhood committees on residents' security.

Neighbourhood committees and neighbourhood police stations constitute a grass-roots foundation for urban social control in China (Tang and Parish 2000; Whyte and

Parish 1984). Social order in neighbourhoods has historically been dependent on the operation of these two organizations and, despite the social changes associated with the economic reform, they continue to play an intermediate role between political authority and residents. Thus, it is critical to consider the role of public control (as reflected in the operations of the neighbourhood police stations) and 'semi-public' control (as reflected in the operations of the neighbourhood committees), along with that of collective efficacy. We hypothesize that these three forms of neighbourhood social control are negatively associated with the risk of household burglary.

Data and Methods

Data

The data are taken from a household survey of approximately 2,500 respondents who were 18 and over in the city of Tianjin, China, in 2004.[5] The survey entailed a multi-stage cluster sampling design. Tianjin has 15 administrative districts and three counties. The sample was drawn from the six traditional districts located in the central urban area of the municipality: Heping, Nankai, Hongxiao, Hexi, Hebei and Hedong. Each district has approximately six to ten City-Street offices. We first randomly selected two City-Street offices from each of the selected districts, yielding a total of 12 City-Street offices.

Among the 12 selected City-Street offices are two large offices that include a relatively large number of neighbourhood committees. Five neighbourhood committees were randomly selected from each of these large City-Street offices, while four neighbourhood committees were randomly drawn from each of the remaining ten City-Street offices. A total of 50 neighbourhood committees were thus obtained through a combination of purposive and random selection. Members of the research team met the supervisor in the selected neighbourhood committees to explain the purpose, importance and financial sources of the survey, and compensation for costs associated with administration. Upon securing agreement for assistance, the research team requested a complete list of households in that neighbourhood.

Fifty-one households were selected in each of the 50 selected neighbourhoods in hopes of reaching the target of 2,500 households. Using the household roster provided by the neighbourhood committee, the research team conducted systematic sampling. Data were collected through anonymous, self-administered questionnaires. With the assistance of the neighbourhood committees, the research team contacted the respondents to schedule the questionnaire administration. The representatives of the neighbourhood committees arranged the specific site for the administration. These sites were convenient locations within the neighbourhood, such as recreational areas or meeting rooms of neighbourhood committees. No one was allowed to enter the site during the administration other than the respondents and members of the research team. The questionnaire was intended to be self-administered, although onsite members of the research team were allowed to clarify the meaning of questions if requested. The overwhelming majority of respondents had an elementary school education or

[5] The survey was a collaborative effort involving the authors and researchers from the Tianjin Academy of Social Sciences. We acknowledge in particular the leading role played by Zhou Lu from the Academy.

higher (97.4 per cent) and, thus, illiteracy was not a problem. Consistent with standard institutional review-board protocols, respondents were assured of the voluntary nature of their participation, their right to refuse to answer questions and the confidentiality of their responses. A total of 2,474 valid questionnaires were obtained. Thus, similar to an earlier survey conducted in Beijing as part of the International Crime Victim Survey (ICVS) (Zhu *et al.* 1995), the response rate is quite high—97 per cent.

Although we were unable to conduct rigorous probability sampling, our combined strategy of random and purposive sampling yielded distributions with respect to demographic characteristics that seem reasonable. A slight majority of respondents are male (51 per cent). The age distribution indicates that 29.9 per cent of the respondents are in the age group of 18–34, 48.4 per cent in the age group of 35–54 and 21.7 per cent in the age group of 55 and over. Also, 38.1 per cent of the respondents reported per capita household income below 500 Chinese dollars (y*uan*), 40.3 per cent indicated household income in a range of 500–999 Chinese dollars and 21.6 per cent reported 1,000 Chinese dollars or above.

Measures

The dependent variable is self-reported victimization of household burglary within the last five years. Burglary victimization is a dummy variable, coded 1 = yes and 0 = no. Given the binary nature of the dependent variable, we estimate multilevel logistic regressions.

As discussed previously, there are eight household variables that reflect target attractiveness (family income, household valuables), guardianship (length of residence, somebody often home, having neighbours watch over the household when residents are away, locking doors when away, having an anti-theft door) and target exposure (row houses). Following common practices in Chinese social research, respondents were asked to report the family income, adjusted for household size. Family income thus refers to monthly income per person for members of the household living together. The categories and codes are: 1 = below 500 yuan (*Ren Min Bi*); 2 = 500–999 yuan; 3 = 1,000–1,999 yuan; 4 = 2,000–2,999 yuan; 5 = 3,000–3,999 yuan; 6 = 4,000 yuan over. The measure of household valuables is an enumeration of the following items in the household: TVs, VCR/VCD/DVD players, cameras, computers, stereos, bicycles, motorcycles and cars.

The length of residence is measured using the question 'How long have you lived at your current address?'. Years are the unit of the measure (less than one year is counted as a year). A question 'How often is nobody at home when you are away?' is used to measure 'somebody often home'. The item has a Likert-type response set, coded as: 1 = always nobody home; 2 = often nobody home; 3 = sometimes nobody home; 4 = seldom nobody home; 5 = always somebody home. Given the polarity of the coding, we label this measure 'somebody home'. The measure of having neighbours watch over the household when residents are away ('neighbor watch') is based on responses to the item 'When everyone is away from home, how often do you ask a neighbor to watch over your home?'. It has a response set coded: 1 = almost never to 5 = almost always. The measure for 'locked doors' is based on the question: 'When everyone is away from home, how often do you lock the doors?' (1 = almost never to 5 = almost always). The item for having an anti-theft door is based on the question: 'Does your house have an anti-theft door?' (1 = yes, 0 = no). It is a dummy variable coded in the direction that having an

anti-theft door indicates greater guardianship. Finally, the question for type of housing asks respondents to describe the style of their houses. It has five response categories: 1 = row house; 2 = dormitory-type housing; 3 = single-family apartment complex; 4 = apartment complex with shared utility spaces; 5 = other. Given our hypothesis about the living arrangements associated with row houses discussed previously, we use a dummy variable coded as 1 = row houses and 0 = others (mainly apartment buildings) to measure target exposure.

The second set of independent variables consists of three neighbourhood structural variables—poverty level, residential stability and rural migrant concentration, which are all measured by aggregating individual survey responses to the neighbourhood level. Neighbourhood poverty is measured as the proportion of respondents who report a household income (per person) below 500 yuan (*Ren Min Bi*). Residential stability refers to the mean number of years that respondents lived at their current address.[6] Rural migrant concentration is measured as the proportion of respondents who report that there are temporary rural labourers living in their neighbourhood.[7]

The last set of independent variables is composed of the three forms of social control: collective efficacy, semi-public control and public control. The measures of these variables are all constructed by aggregating responses to the neighbourhood level. Following the lead of Western researchers (Sampson *et al.* 1997), collective efficacy is measured as the combination of social cohesion and informal social control. The survey contains three items relevant to social cohesion: 'Do you think your neighborhood is a close-knit neighborhood?' 'When you or your family have (has) some important matters, does anyone in this neighborhood care much about them?' 'Do people in this neighborhood trust each other?' Each question has a Likert-type response set: 1 = certainly so to 4 = certainly not. Responses to these questions were recoded and summed to create an index of social cohesion. The reliability coefficient is 0.78.

The item relevant to collective action of neighbours is 'If there is a major problem around here, do neighbors get together to discuss and work out solutions to deal with it?'. The response set and coding for this item are the same as that for the items of social cohesion. Consistent with the Western research, we combined the measures of social cohesion and informal control to create the measure of collective efficacy.[8]

Semi-public control reflects the operations of the 'neighborhood mediation subcommittee' (*Tiao Jie Wei Yuan Hui*), which is a major subcommittee of the neighbourhood committee (described above). Its main responsibility is to mediate disputes that arise in

[6] Because these structural variables are obtained by aggregating individual survey responses, the possibility of high collinearity between the structural variables and the individual-level measures of family income and residential length warrants consideration. The correlation between the measures of family income and neighbourhood poverty level is –0.31, and the correlation between the measures of residential length and neighbourhood residential stability is 0.56. Collinearity should not therefore be a significant problem.

[7] Temporary rural labourers are highly mobile, and they are not likely to register with local authorities. As a result, it is difficult to recruit and survey them directly, and use aggregated self-reports to estimate the migrant population. We thus measure rural migrant concentration indirectly.

[8] We note two differences between our measurement of collective efficacy and that of Sampson *et al.* (1997). Sampson *et al.* use five items to measure informal control. Most of these items are not applicable to China. For example, one asks about the likelihood that children were spray-painting graffiti on a local building. Such adolescent behaviour is uncommon in urban China. Sampson *et al.* also report a much higher correlation between the two components of collective efficacy (social cohesion and informal social control): 0.80 vs 0.42. This may reflect the fact that only a single indicator of informal social control is available in our survey. It is also possible that the two dimensions of collective efficacy do not converge as closely in China as in the West. Future research with more extensive measures of the informal control component of collective efficacy is needed to assess these alternative interpretations.

daily life among neighbours and family members (Zhang *et al.* 1996). The specific item is 'How active is your neighbourhood mediation committee?'. The original response categories and codes are: 1 = not active; 2 = fairly active; 3 = very active; 4 = don't know. Given the distribution of responses, we combined categories 2 and 3, and 1 and 4, yielding a dummy variable with 1 = active and 0 = not active.[9]

The survey item that measures formal or public control asks 'How often do you see police officers (*Min Jing*) in your neighborhood?'. For Chinese residents, it is clear that the term 'police officers' refer to police officers from the neighbourhood police station. The item has a Likert-type response set coded: 1 = never; 2 = rarely; 3 = sometimes; 4 = often. Considering the distribution of these response categories, we combined category 1 with 2, and 3 with 4, to create a dummy variable of police visibility in the neighbourhood (1 = high, 0 = low).

Univariate statistics for all variables are reported in Table 1. The mean for burglary is 0.04, indicating that approximately 4 per cent of the respondents reported a burglary within the past five years. This figure indicates that criminal victimization in China is still fairly low when compared with most industrialized countries (Tseloni and Farrell 2002).

Caveats

We acknowledge two important caveats associated with the survey data. As noted above, our 'time window' for the measurement of victimization is the previous five years. The conventional practice is to employ shorter periods, usually a year or six months. Following procedures in the ICVS (Nieuwbeerta 2002), the Tianjin questionnaire first asks whether the respondent experienced a victimization within the past five years, and follows up with a question on whether the most recent event occurred within the past year. We anticipated that victimizations would be relatively infrequent in China, which would require the use of the longer period. This is indeed the case. When calculated on a one-year basis, there are fewer burglary incidents (36) than neighbourhoods (50), which precludes meaningful multilevel analysis.

The use of the longer time window is likely to exacerbate the well known survey problems of memory decay and telescoping. In addition, ambiguities arise surrounding causal order. For example, respondents' reports of guardianship activities at the time of survey administration could be responses to, rather than determinants of, victimization. This issue is a common one in victimization surveys, but it becomes more problematic as the recall period increases.

An additional difficulty in conducting neighbourhood-level analysis in China is the absence of demographic data for small-scale territorial units. In the United States, measures of structural characteristics of neighbourhoods are typically based on census tract data. The smallest jurisdiction with census data in Tianjin, however, is the city district, which is quite large. The neighbourhood variables are accordingly measured with survey estimates. We recognize the significance of these methodological limitations but note that our dataset is the only one of its kind. Thus, the analyses should serve as an instructive exploratory effort to assess the correlates of household burglary using a multilevel framework in a previously neglected context.

[9] Our coding implies that a 'don't know' response indicates a low level of activity of the neighbourhood committee, which seems reasonable because respondents are likely to know about the committee if it is deeply involved in the neighbourhood.

TABLE 1 *Descriptive statistics of variables*

	Mean	SD	Minimum	Maximum
Dependent variable				
Burglary	0.04	0.20	0.00	1.00
Household variables				
Family income	1.91	0.91	1.00	6.00
Household valuables	5.39	2.40	0.00	20.00
Length of residence	11.99	10.25	1.00	72.00
Somebody home	3.26	1.29	1.00	5.00
Neighbour watch	1.77	1.09	1.00	5.00
Door locked	4.65	0.79	1.00	5.00
Anti-theft door	0.86	0.35	0.00	1.00
Row house	0.09	0.28	0.00	1.00
Neighbourhood structural variables				
Poverty level	0.38	0.13	0.06	0.70
Residential stability	11.93	5.81	2.00	26.94
Rural migrant concentration	0.08	0.07	0.00	0.33
Neighbourhood social control variables				
Collective efficacy	12.87	0.47	11.60	13.96
Semi-public control	0.38	0.14	0.06	0.72
Public control	0.64	0.15	0.24	0.96

Notes: Statistics for the dependent and household-level variables are based on 2,471 respondents. Statistics for the neighbourhood-level variables are based on an *N* of 50.

Analytical strategy

We conduct hierarchical logistic regressions given our multi-stage sampling design and the dichotomous dependent variable. These regressions allow for simultaneous estimates of the effects of the household-level and neighbourhood-level variables on the risk of household burglary, adjusting for the 'nesting' of households within neighbourhoods (see Appendix 1 for details).

We begin statistical analysis by estimating an intercept-only model. This enables us to assess whether the risk of household burglary varies significantly across neighbourhoods. Next, the household-level variables are introduced into the model. We then enter the neighbourhood structural variables to see whether these contextual variables affect the likelihood of household burglary, net of the effects of the household-level factors. Our final, full model introduces measures of three forms of social control—collective efficacy, semi-public control and public control.[10]

Results

Table 2 reports the results of the multilevel logistic regressions. The first column is the intercept-only model. The statistics for the variance component (0.273) show that, as expected, the risk of household burglary does indeed vary significantly across the sampled neighbourhoods ($p < 0.05$).

[10] We also estimated random slope models and none of the slopes for the household-level variables exhibits significant variation across neighbourhoods.

TABLE 2 *Hierarchical logistic regressions of household burglary*

Variables	1	2	3	4
Fixed effects				
Intercept	–3.12** (0.12)	–3.67** (0.76)	–4.45** (0.85)	–3.86** (0.91)
Household variables:				
Family income	–	0.20* (0.10)	0.22* (0.10)	0.21* (0.10)
Household valuables	–	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)
Length of residence	–	–0.01 (0.01)	–0.02* (0.01)	–0.02* (0.01)
Somebody home	–	–0.13* (0.06)	–0.13$^{\Psi}$ (0.06)	–0.13* (0.07)
Neighbour watch	–	0.08 (0.07)	0.08 (0.08)	0.09 (0.08)
Door locked	–	0.14 (0.13)	0.14 (0.13)	0.14 (0.14)
Anti-theft door	–	–0.31 (0.34)	–0.19 (0.35)	–0.19 (0.34)
Row house	–	0.45 (0.50)	0.32 (0.48)	0.40 (0.48)
Neighbourhood structural variables:				
Poverty level	–	–	0.26 (0.88)	0.33 (0.84)
Residential stability	–	–	0.06* (0.02)	0.08** (0.02)
Rural migrant concentration	–	–	–0.53 (1.41)	–1.71 (1.58)
Neighbourhood social control variables:				
Collective efficacy	–	–	–	–0.53$^{\Psi}$ (0.28)
Semi-public control	–	–	–	1.40 (1.21)
Public control	–	–	–	–2.11* (0.99)
Random effects				
Intercept, τ_{00} σ	0.273	0.280	0.228	0.172
χ^2	73.70*	72.61*	62.70*	54.13

Notes: Standard errors are reported in the parentheses. * $p < 0.05$; ** $p < 0.01$; $^{\Psi}p < 0.05$, one-tailed test.

Model 2 adds the household-level variables that reflect target attractiveness, guardianship and target exposure. Consistent with expectations, the coefficient for family income is significantly positive. Households with high incomes are presumably more attractive targets for burglary. Also consistent with hypotheses, having someone in the household (presence of guardians) reduces the risk of burglary, as reflected in the significant negative coefficient (–0.13). The effects of the other household-level measures are not significant. Although the pattern of results for the household variables conforms to opportunity logic of routine activities/lifestyle theories, the variance in burglary risk across neighbourhoods is not accounted for by these variables in combination (the variance component is virtually unchanged).

The neighbourhood structure variables are entered in Model 3. Contrary to the widely observed findings in the West, poverty has no contextual effect on the risk of burglary in Tianjin. The results also show that the coefficient for residential stability is significant, but the sign is positive (0.06). This indicates that neighbourhoods with greater residential stability have higher burglary risks, net of the household-level variables in the model. Rural migrant concentration is unrelated to burglary risk. Adding the neighbourhood structure variables to the model has almost no effect on the coefficients for family income and 'somebody home'.

The addition of the neighbourhood structure variables produces one noteworthy change in the effect for a household variable: length of residence. The coefficient for the length of residence becomes significantly negative in Model 3 (–0.02). As the length of residence increases, the risk of burglary decreases. This finding is consistent with our hypothesis about guardianship, and it indicates an interesting contrast between the household-level and contextual effect. At the level of the individual household, lengthy

residence is a protective factor for burglary. At the contextual level, a residentially stable neighbourhood is a high-risk neighbourhood, perhaps because the newer neighbourhoods have access to more elaborate security arrangements.

The measures of neighbourhood social controls are added to the equation in the final model. The coefficients for collective efficacy and public control are significant in the expected direction. Neighbourhoods characterized by high collective efficacy, and those where the local police are highly visible, have relatively low risks of burglary. These results are consistent with those in the West (Sampson *et al.* 1997; Velez 2001). In contrast, our hypothesis about semi-public control has not been supported. The coefficient for this measure is non-significant.

We also estimated models by entering the social control measures individually along with all the household-level and neighbourhood structural variables. The results confirm that the measure of semi-public control has no independent effect, even without controlling for the effects of collective efficacy and public control. The measure of collective efficacy exhibits a stronger effect when considered as a sole indicator of neighbourhood control, while the effect of public control remains the same.

The results in the final model indicate that the inclusion of the neighbourhood social control variables does not alter the observed effects of family income, 'somebody home' and the length of residence. The coefficient for neighbourhood residential stability becomes stronger. In total, the neighbourhood social control variables account for an appreciable proportion of the variance in burglary across neighbourhoods not explained by compositional differences and the neighbourhood structural variables (about 25 per cent), and once the neighbourhood social control variables are included in the model, the variance component falls below statistical significance.

Summary and Conclusions

We have applied the multilevel framework of Western research to explain variation in household burglary using a unique dataset generated from a survey in the city of Tianjin. Bearing in mind the methodological caveats noted above, the results indicate that social factors predict burglary risk in Tianjin in theoretically meaningful ways. At the same time, there are some interesting points of divergence when our findings are contrasted with those in the West.

We find that in Tianjin, as in Western cities, the risk of household burglary varies significantly across neighbourhoods. Evidently, the increasing diversity of neighbourhoods in Chinese cities has been accompanied by spatial differentiation in levels of burglary. An ecological structuring of crime, which has been widely observed in the Western cities, appears to characterize contemporary Chinese cities as well.

We also find that selected household measures are related to burglary in a manner consistent with the routine activities/lifestyle framework. A common indicator of target attractiveness—household income—is positively associated with the risk of household burglary, whereas two indicators of guardianship—length of residence and somebody home—are negatively associated with this risk. The basic 'opportunity' logic of Western theories of victimization is apparently generalizable to urban China.

Inconsistent with classical social disorganization theory, the data reveal a positive effect of residential stability on the risk of burglary in the city of Tianjin. This finding is likely to reflect features of stratification in urban China. As noted previously, the

economic reform has transformed the housing market, and the new neighbourhoods are quite attractive and are likely to be populated by higher-status residents. Although the positive effect of residential stability emerges net of household income, the opportunity to move depends not only on economic resources but also social and political resources. These observations suggest that residential mobility in urban China entails conditions with different implications for crime control. To the extent that stability fosters social cohesion, crime is likely to be reduced. However, controlling for the length of individual residence and collective efficacy, the positive effect of residential stability may indicate that neighbourhoods characterized by greater residential mobility (i.e. newer neighbourhoods) are inhabited by residents who are more able to secure resources, including those that enhance personal safety (see also Yang and Hoffman 1998).

Also in contrast with Western theory and research, we find no overall effect on burglary of one widely studied feature of neighbourhood structure—poverty levels. A possible explanation for this null effect is that social organization in neighbourhoods in urban China is not as dependent on the economic status of residents as it is in the West because of the neighbourhood organizational infrastructure. Poor urban neighbourhoods in China are not as likely to experience 'social disorganization' as are Western urban neighbourhoods because the government provides an organizational infrastructure represented by the grass-roots government agencies—City-Street offices, neighbourhood police stations and neighbourhood committees. This politically directed establishment contrasts sharply with the voluntary character of organization of Western urban neighbourhoods. As a result, the effect of neighbourhood poverty level in urban China may be largely contingent on the operation of those public and semi-public organizations, along with social ties among residents that are actively promoted by governmental agencies. [11]

Our indicator of neighbourhood migrant concentration yields no overall effect on burglary, which is puzzling. One possible explanation is that the design of the Tianjin survey is not well suited to assess the impact of migration. As noted, the districts sampled are the traditional ones in the centre of the city. These are not the areas with the largest concentrations of migrants. The results might differ for neighbourhoods in the periphery, which contain more sizable numbers of the 'floating population'. Alternatively, the null effect of rural migrant concentration may imply misperceptions of the criminal activities of rural migrants. Although there has been a concern with the connection between rural migrants and crime, supporting evidence is lacking. Further studies are needed to document levels of criminal offending and victimization among this particular population.

Consistent with the neo-social disorganization perspective, the data show that two forms of neighbourhood social control—collective efficacy and public control—are significant predictors of household burglary. The measure of collective efficacy, based on the combination of social cohesion and informal social control, and the measure of public control, based on the visibility of police from the neighbourhood police station (*Ming Jing*), exhibit negative effects on burglary as expected. These findings indicate the applicability of forms of neighbourhood social control that have played a prominent role in Western research to the Chinese setting.

[11] Consistent with this interpretation, the data reveal a non-significant correlation ($r = 0.11$) between the measures of neighbourhood poverty level and collective efficacy.

Our hypothesis concerning the effect of semi-public control on household burglary is not supported. Neighbourhood committees have played a key role in maintaining order and facilitating political control in Chinese cities for decades, and the central government remains committed to maintaining the vitality of these committees. Yet, we observe no significant effect of the measure of semi-public control on burglary. One interpretation for this null effect is that it is due to measurement limitations. The survey item measures the operations of the 'neighborhood mediation committee'. Although this committee is a major subcommittee, a neighbourhood committee has other subcommittees and activities. Accordingly, our measure may only capture one aspect of the roles that a neighbourhood committee plays to ensure neighbourhood safety. Further research is needed to develop more comprehensive measures of the activities of neighbourhood committees to better assess the impact of semi-public control.

To summarize, our analyses reveal that variation in risks of household burglary in Tianjin is socially structured and that the integrated multilevel framework developed in the West helps explain this variation. As predicted by routine activities/lifestyle theories, indicators of target attractiveness and guardianship are significantly related to burglary risk. As predicted by social disorganization theory, neighbourhood *processes* of collective efficacy and public control affect burglary risk. At the same time, the interconnections between neighbourhood *structures* and urban crime in China entail different dynamics from those observed in the West. Identifying the structural correlates of neighbourhood crime in urban China and explicating the corresponding mechanisms constitute promising avenues for future comparative criminology.

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Appendix 1: The Statistical Model: Hierarchical Logistic Regression

We assume that for the i_{th} sample individual in the j_{th} neighbourhood, we observe a dichotomous response for his or her victimization experience in household burglary:

$Y_{ij} = 1$ for sample individual who responds 'yes'
$Y_{ij} = 0$ for sample individual who responds 'no'

Assume that the Y_{ij} responses are distributed independently as a Bernoulli random variable, and we denote by p_{ij} the probability that the i_{th} individual observation will respond 'yes'. Then, we define the logit of victimization for individual i in neighbourhood j as logit $(Y_{ij}) = \log[p_{ij}/(1 - p_{ij})]$. Thus, for the individual i residing in neighbourhood j, our level-one model is:

$$\text{Logit}(Y_{ij}) = \beta_{0j} + \beta_{1j}X_{2ij} + \beta_{2j}X_{2ij} + \ldots + \beta_{Pj}X_{Pij}$$

where β_{pj} $(p = 0, 1, \ldots, Q)$ are coefficients; X_{pij} is individuals' p_{th} household-level variable for case i in neighbourhood j. At the neighbourhood level, we model β_{0j} as a dependent variable:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_{1j} + \gamma_{02}W_{2j} + \ldots + \gamma_{0S0}W_{S0j} + u_{0j}$$

where γ_{0s} $(s = 0, 1, \ldots, S_q)$ are coefficients for neighbourhood-level variables; W_{sj} is a neighbourhood-level explanatory variable; and u_{0j} is a neighbourhood-level random effect.