Bicycle-Theft Victimization in Contemporary Urban China

A Multilevel Assessment of Risk and Protective Factors

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China has been characterized as a "bicycle nation." Since the economic reform was initiated in the early 1980s, bicycles have become a major target of criminal activities because of their availability, utility, and monetary value, and because of the difficulty of securing them. The present study discusses the Chinese concern with bicycle theft and explores the social and legal aspects of bicycle-theft victimization in China. Drawing upon the lifestyle-exposure and routine-activities perspectives, the present study specifies a number of important household- and neighborhood-level variables as indicators of target attractiveness, guardianship, and exposure to potential offenders to explore the risk of bicycle theft in urban China. Using data collected from a recent survey in the city of Tianjin, the study conducts multilevel analyses of the risk and protective factors for bicycletheft victimization. The data show that house type (row houses) and number of adult household members are significant protective factors for the risk of bicycle theft, whereas neighborhood poverty level is a significant risk factor. Exposure to potential offenders, which is measured in terms of neighborhood deviance and/or crime level, is also a risk factor for bicycle-theft victimization.

Keywords: bicycle-theft victimization; multilevel analysis; China.

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Introduction

China is widely known as a "bicycle nation." Bicycles are important possessions of Chinese families and a major means of transportation used to get to work, to shop, to visit, and to do a wide variety of things. During the transition to a market economy since the early 1980s, China has experienced an upsurge in many forms of criminal activities, including bicycle theft. Indeed, bicycle victimization has become a major public concern. Unfortunately, there has been a lack of data and systematic studies of bicycle theft in China. Because scientific research on criminological phenomena more generally has been limited, Chinese studies on bicycle theft are usually based on speculations without sound theoretical frameworks and empirical evidence (Zhou and Cong 2001).¹

The present study discusses the social and legal aspects of bicycle theft and explores the risk and protective factors for this offense in a multilevel framework drawing upon the lifestyle-exposure and routine-activities perspectives. The exploration concentrates on target attractiveness, capable guardianship, and exposure to potential offenders for the risk of bicycle-theft victimization. Our empirical analyses are based on survey data recently collected in the city of Tianjin, China. The analyses provide a unique opportunity to assess the generalizability and applicability of the lifestyle-exposure and routine-activities theories in a distinctive non-Western social context for a relatively minor but common offense—bicycle theft. Although Western countries have experience of bicycle theft (Nieuwbeerta 2002; van Kesteren, Mayhew, and Nieuwbeerta 2000), few studies have addressed the issue because it is not a significant concern in these countries. However, bicycle theft in China has become a prominent public concern in the course of the nation's modernization because of the unique social and economic context.

Bicycles as Attractive Crime Targets in China

Since China initiated the economic reform in the early 1980s, people's incomes and living standards have improved significantly. However, the

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improvement in living conditions has also been accompanied by a rise in criminal activities. Official statistics reported a 340 percent increase in total crime and a tenfold increase in serious crime from 1979 to 1990 (Curran 1998; Rojek 1996). In 1978, the crime rate was 55.91 per 100,000; it reached 163.19 per 100,000 in 1998 (Liu and Messner 2001). Larceny and theft, which includes bicycle theft, usually account for about 60 percent of the total official criminal acts (China National Bureau of Statistics 2000a; Editorial Committee of Law Yearbook of China 2000). For example, the police reported 1,447,390 cases of larceny and theft in 1999, which represents 64.4 percent of all reported criminal cases (Editorial Committee of Law Yearbook of China 2000).²

As scholars have observed, the increasing crime rates are rooted to a large extent in China's transition to a market economy (e.g., Rojek 2001). Getting rich has become an important goal in Chinese society, and social and economic inequality has greatly increased within the urban areas and between the urban and rural areas (Cao and Dai 2001). The economic transition has also forced Chinese authorities to lift many of the constraints on people's behaviors, such as strict control of population mobility (Ma 2001). Given this changing social and economic context, it is not surprising that more people have been involved in illegal activities.

As levels of crime in general are rising, bicycles have become attractive crime targets because of their availability, utility, monetary value, and the difficulty of securing them. Bicycles have long been popular in China, and the increasing standard of living has expanded their availability. In 1985, there were 152.27 owned bicycles per 100 urban households. In 1999 there were 220.10 owned bicycles per 100 households in Beijing. This means that on average each household had more than two bicycles (China National Bureau of Statistics 2000b:327). The widespread availability makes bicycles especially vulnerable as targets of theft.

Bicycles also have great utility in China. They are a major form of transportation for Chinese people. Public transportation is still in short supply, although it has improved since the 1980s. For instance, though the total population of Beijing in 1999 (excluding the floating population) was more than 12 million, the city had only 11,281 city buses, 546 trolleys, 491 subways, and 55,856 taxis (China National Bureau of Statistics 2000b:359). Given the huge size of the population in Beijing, public transportation cannot meet the needs of the public. As a result, people rely on bicycles. Surveys conducted in 1997, 1999, and 2000 showed that more than 50 percent of residents in several major cities (i.e., Nanjing, Hangzhou, and Shijazhuang) used bicycles as their major means of transportation (Urban

Transport Center 2004). The great usefulness of bicycles makes them attractive targets of criminal activities.

The monetary value of bicycles also enhances their attractiveness to offenders. The price of new bicycles usually ranges from 200 to 500 Chinese dollars, which is still a large amount of money for a normal Chinese family. In 1999, per capita dollar annual income in Beijing was 9,238 Chinese dollars (China National Bureau of Statistics 2000b). A new bicycle costing 300 Chinese dollars would require 3.3 percent of a family's annual income and 39 percent of their monthly income. Some Chinese reports indicate that there are criminal gangs that specialize in bicycle theft and/or trafficking, and that there are extensive underground markets for stolen bicycles (Have You Had Any Bicycles Stolen? 2001; Solving the Problem of Bicycle Theft 2001).

Though their availability, utility, and monetary value make bicycles attractive targets for criminals, the difficulty of securing bicycles renders them vulnerable. There are few dedicated and secured parking spaces. Registration systems are poor and legal protection is lacking. Many people place their bicycles outside their houses because of limited housing and private space. Although people can lock their bicycles, the locks can be easily broken. In large public places, such as supermarkets or big stores, there may be secured parking spaces that are monitored; however, most of the time residents simply park their bicycles in convenient public areas or in places where they can avoid parking fees.

Although people are required to register their bicycles, many choose not to because of registration fees and a feeling that registration is useless (Police Handing Back Stolen Bicycles 2002). Also, bicycle registration is poorly managed because of the corruption, insufficient funding, and poor enforcement practices that are very typical in China. Police are reluctant to process cases of bicycle theft because the value of a stolen bicycle, though considerable to the victim, is not large enough to establish a theft and/or larceny case (Police Handing Back Stolen Bicycles 2002). For instance, the monetary value must be over 2000 Chinese dollars in Beijing for establishing a theft case. In a similar vein, when China's Supreme Court reviewed the Criminal Law regarding penalties of larceny and theft, it ruled that a penalty of less than 5-years imprisonment, detention, or other administrative punishment can be imposed only if the value of a theft is relatively large, that is, at least 500 to 2,000 Chinese dollars (China Supreme Court 1998). Since a new bicycle usually costs less than 500 Chinese dollars, the penalty for bicycle theft is not high. In addition, the police are usually reluctant to take strong action except in cases of repeated offenders in bicycle theft. They may detain a bicycle thief for several days or issue a small

fine. This lax law enforcement also makes victims unwilling or hesitant to report their bicycle losses to police.

In sum, their availability, utility, and monetary value make bicycles attractive targets at a time when crime rates are rising. Lack of secured parking spaces, poor registration, and lack of effective law enforcement also inhibit guardianship. Hence, many people have experienced bicycle theft. Although there are no accurate official statistics, a fairly recent survey showed that of 100 urban residents, 85 reported the experience of losing their bicycles as a result of theft (The Problem of Bicycle Theft 2000). Bicycle theft is thus a serious social problem that affects a large number of urban residents in China. The present study represents an attempt to use the lifestyle-exposure and routine-activities perspectives to explore the risk and protective factors related to bicycle theft with original survey data for a large Chinese city.³

Theory and Hypothesis

The lifestyle-exposure theory assumes an interrelationship between activity patterns and the risk of criminal victimization (Hindelang, Gottredson, and Garofalo 1978). It argues that variations in activity patterns are related to differential exposures to dangerous places, times, and others that are linked to the risk of criminal victimization (Miethe and Meier 1994). Therefore, activity patterns may account for the patterns of criminal victimization. In a similar theoretical vein, the routine-activities theory posits that structural changes in activity patterns have significant impact on the chances and rates of criminal victimization (Cohen and Felson 1979). The impact emerges from the convergence in space and time of three requisites for a successful predatory victimization: motivated offenders, suitable targets, and the absence of capable guardians. The likelihood that these conditions will converge in space and time reflects people's normal, "routine" activities and lifestyles. The spatial and temporal structures of routine legal activities significantly influence suitable targets and capable guardians against crime and help "people to translate their criminal inclinations into action" (Cohen and Felson 1979:589).

Western studies have provided ample support for the lifestyle-exposure and routine-activities theories in developed countries (e.g., Miethe and Meier 1994; Miethe, Stafford, and Long 1987; Mustaine and Tewksbury 1998; Tseloni and Farrell 2002; van Wilsem, de Graaf, and Wittebrood 2002). Most of the studies have focused on the risk of victimization in serious crimes, such as burglary or robbery, which reflect common concerns in developed counties. Not many studies have utilized the theories to study the risk of victimization in bicycle theft, which in many developed nations is viewed as a relatively minor property crime. One exception is the study by Wittebrood and Nieuwbeerta (2000). Using data collected from a 1996 survey in the Netherlands, they assessed the effects of previous victimization experience and routine activities on the risk of criminal victimization. Although their focus was still on victimization risks in serious crimes such as assault and burglary, they also assessed the risk of victimization in bicycle theft. They found that the risk was more likely to be affected by indicators of routine activities (e.g., gender and urban residential status) than by previous victimization experience. Although limited to the Netherlands, their study indicates the potential utility of the lifestyle-exposure and routineactivities perspectives for investigating the risk of victimization for relatively minor offenses.

The Chinese experience of victimization in bicycle theft provides a unique opportunity to utilize the lifestyle-exposure and routine-activities theories to study the risk of victimization for relatively minor offenses in a distinctive social and cultural context. This utilization allows us to assess the generalizability and applicability of the theories in the Chinese context and may provide insights for the Chinese to understand their risk of victimization in bicycle theft.

In developing our hypotheses, we specify variables at two levels-the household level and the neighborhood level-in terms of guardianship, target attractiveness, and exposure to potential offenders. Four household measures reflect guardianship: the number of household adult members, household absence (often no one at home), reliance on neighbors to watch over the home when away, and housing type. The first three measures are readily conceptualized as indicators of household guardianship for a property crime such as bicycle theft from the home. With respect to housing type, we direct attention to "row houses." Row houses with a shared courtyard were the dominant house type in urban China in the prereform era. Since the 1980s, numerous row houses have been demolished, and apartment buildings have developed in urban areas to improve residents' housing conditions. The Chinese usually place their bicycles outside their houses because of limited living space. The layout of row houses with courtyards makes it easy for residents to watch and guard their bicycles and those of their neighbors. In contrast, residents in apartment buildings have greater difficulty monitoring their bicycles if they park them outside the buildings or in hallways. We therefore include house type as an indicator of household guardianship. Our general hypothesis is that household guardianship as indicated by the four household measures decreases the risk of victimization for bicycle theft at home.

Two household measures are used to reflect target attractiveness: number of bicycles owned by the household and household income. Presumably, more owned bicycles in a household imply more suitable targets for potential thieves, and higher income families can afford more valuable bicycles. Given the logic of lifestyle-exposure and routine-activities theories, we hypothesize that target attractiveness as indicated by the number of bicycles owned by the household and household income increases the risk of victimization for bicycle theft at home.

Three neighborhood contextual variables are included that also indicate possible guardianship: neighborhood housing structure, neighborhood poverty level, and neighborhood social cohesion. Neighborhood housing structure refers to the types of houses in the neighborhood in general. The assumption is that a neighborhood with a large number of row houses may have a "contextual" guardianship effect for residents' bicycles because of the unique housing layout. As discussed above, these one-level houses have very limited spaces, and several houses share a small courtyard with a public entrance. Residents who reside in these houses engage in much of their routines either in the courtyard or in the neighborhood alley. As a result, these housing conditions make it easy for neighbors to watch each other's property. Indeed, foreigners often observe that residents who reside in row houses do not have much privacy (Whyte and Parish 1984). We therefore hypothesize that residents who reside in a neighborhood with a large proportion of row houses are likely to have lower risk for bicycle theft at home than those who live in a neighborhood with a large percentage of apartment buildings.

Western studies indicate that poor neighborhoods are likely to be at greater risk of violent and property crimes (e.g., Kershaw et al. 2000; Sampson and Wooldredge 1987; Smith and Jarjoura 1989). Within the Chinese context, it is also plausible to expect that certain conditions in poor neighborhoods will be conducive to bicycle theft. Street lighting is not as strong or reliable in low-income as in more prosperous neighborhoods, and storage space in public areas around individual households is limited, implying that bicycles will often be left in places beyond easy surveillance of owners. We thus hypothesize that as the neighborhood poverty level increases, the risk of bicycle theft at home increases, net of controls. Note that this "contextual effect" of neighborhood poverty is expected to operate in an opposite direction to any "compositional effect" associated with household income (high-income households are likely to be more attractive targets).⁴ Western research also suggests that neighborhoods characterized

by weak social cohesion are likely to experience more criminal activities because residents in these neighborhoods are less able to identify strangers (e.g., Bennett and Wright 1984; Brown and Altman 1981; Rengert and Wasilchick 1985; Taylor and Nee 1988). Therefore, it is reasonable to hypothesize that the level of neighborhood social cohesion is negatively related to the risk of bicycle theft.

In addition to target attractiveness and guardianship, the third important determinant of victimization risk is exposure to potential offenders. Because offenders are more likely to engage in criminal activities in the areas where they live, work, or entertain themselves (Brantingham and Brantingham 1981; Buck, Hakim, and Rengert 1993; Holmes and Holmes 1996; Rhodes and Conley 1981), it is plausible to expect that people who live in areas with high levels of deviance and crime would have higher exposure to potential offenders. Following the lead of Western studies, the present research uses neighborhood deviance and crime levels as an indicator of proximity to motivated offenders.

The study also includes an additional neighborhood variable to indicate exposure to potential offenders that is somewhat unique to China—rural migrant concentration. This variable reflects a distinctive aspect of the ecology of urban China today. The Chinese authorities have loosened restrictions on population mobility from rural to urban areas as part of the economic reform and are planning to abandon the dual-citizenship system for rural and urban residents. 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" has significantly changed the character of selected urban areas, and there has been growing concern over poverty and crime in neighborhoods where rural migrants are concentrated (see Solinger 1999). Thus, our final hypothesis is that the level of rural migrant concentration is positively associated with the risk of bicycle theft at home.

Data and Methods

Data Collection

The data for the study came 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 multistage cluster sampling design. Tianjin has 15 administrative districts and three counties. The sample was drawn from the 6 traditional districts located in the central urban area of the municipality. They include Heping, Nankai, Hongxiao, Hexi, Hebei, and Hedong districts.

Each district has approximately 6 to 10 City-Street Offices, which are the grassroots organizations of the Tianjin government. We first randomly selected 2 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 2 large offices that include a relatively large number of neighborhood committees. Five neighborhood committees were randomly selected from each of these large City-Street Offices, while 4 neighborhood committees were randomly drawn from each of the remaining 10 City-Street Offices. A total of 50 neighborhood committees were thus obtained through a combination of purposive and random selection. Members of the research team met the supervisor in each of the selected neighborhood committees to explain the purpose and importance of the survey, the 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 neighborhood.

Fifty-one households were selected for the survey in each of the 50 selected neighborhoods in hopes of reaching the target of 2,500 households. Using the household roster provided by the neighborhood committee in each selected neighborhood, the research team conducted systematic sampling. A starting point was randomly determined and every eighth household from each neighborhood was selected until the specified number of households was obtained. The research team defined a criterion date to select a specific respondent from a selected household with more than one person 18 years old or older. The individual with a birthday closest to the criterion date was chosen to be the respondent.

Data were collected through anonymous, self-administered questionnaires at convenient sites within the neighborhood (e.g., recreational areas). With the assistance of the neighborhood committees, the research team contacted the respondents to schedule the questionnaire administration. The representatives of the neighborhood committees arranged the specific site for the administration and made sure that the site was suitable (e.g., facilities such as tables and chairs were available). 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 higher (97.4 percent), 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. After respondents had completed the questionnaires, they were placed in large envelopes that were sealed and transmitted directly to the chief Tianjin researcher who secured them in a safe location. A total of 2,474 valid questionnaires were obtained. Because of missing data for 2 cases on a couple of the household measures, the sample size for our analysis is 2,472.

Measures

The dependent variable for our analyses is self-reported victimization of bicycle theft at home within the last 5 years.⁶ The variable is coded 1 = yesand 0 = no. The study has 11 independent variables, 6 measured at the household level and 5 at the neighborhood level. The 6 household-level variables are measured as follows. House type is a dummy variable measured using a survey item—"Please describe the style of your house" (1 = row)*houses*, 0 = *apartment buildings/others*). Household income (per person) is measured as an ordinal variable ranging from 1 = below 500 Chinese dollars (yuan) monthly to 5 = over 4,000 Chinese dollars (yuan) monthly. The measure of number of household-owned bicycles is based on the respondents' reports of how many bicycles are owned in their households. The number of adult household members is measured in terms of the number of family members age 18 or above living in the household. Household absence is measured using an item asking: "How often is nobody at home?" The item has a Likert-type response set: 1 = almost never to 5 = very often. Reliance on neighbors to watch over the home when away is measured by a survey question: "When everyone is away from home, how often do you ask a neighbor to watch over your home?" It also has a Likert-type response set ranging from 1 = almost never to 5 = almost always.

The five neighborhood-level variables are housing structure, poverty level, social cohesion, deviance/crime, and rural migrant concentration. The survey item—"Please describe the style of your house"—was used to aggregate the percentage of row houses for a measure of neighborhood housing structure. Using data on self-reported household monthly income, we created a dummy variable scored "1" for households with per person monthly income below 500 Chinese dollars and computed the mean to measure the neighborhood poverty level. Following practices in Western research (Sampson, Raudenbusch, and Earls 1997), neighborhood social cohesion is measured with three survey questions: "Do you think your neighborhood is a close-knit neighborhood?"; "When you or your family has some important

matters, does anyone in this neighborhood care much?"; "Do people in this neighborhood trust each other?" Each question has a Likert-type response set: 1 = certainly not to 4 = certainly is so. Responses to these questions were aggregated and summed to create an index of neighborhood social cohesion. The standardized reliability coefficient is .80.

Three items are used to measure neighborhood deviance and crime levels, following the general logic of prior Western studies (e.g., Miethe and Meier 1994:95–6). The items ask respondents to rate how often gang fights, burglaries, and disorderly or threatening behaviors from youths have occurred in their neighborhoods. The response set for these items ranges from 1 = never to 4 = often. The responses to these items were aggregated and summed to create an index representing the neighborhood deviance and crime level. The standardized reliability coefficient is .74. Rural migrant concentration is measured as the proportion of respondents who report that there are temporary rural laborers living in their neighborhood (see Table 1 for the descriptive statistics of the variables).

Analytical Strategy and Statistical Procedures

Our analysis follows conventional practices for multilevel model building. We first estimate an intercept-only model to assess whether the rate of bicycle theft at home varies significantly across neighborhoods. Next, the household-level variables are entered into the model to determine whether these variables affect the risk of bicycle theft at home in the hypothesized way and to assess how much of the variance of bicycle theft across neighborhoods is accounted for by compositional differences in the measured household characteristics. Finally, we enter the neighborhood contextual variables affect the likelihood of bicycle theft at home in accord with theoretical expectations, net of the effects of the householdlevel factors. These analyses also allow us to determine how much of the variance of bicycle theft across neighborhoods is explained by the neighborhood contextual factors.

Given the dichotomous nature of the dependent variable, we estimate logistic regressions in a multilevel framework as follows. Assume that for the *i*th sample individual in the *j*th neighborhood, we observe a dichotomous response for his or her victimization experience in bicycle theft:

 $Y_{ij} = 1$ for sample individual who responds "yes"; $Y_{ij} = 0$ for sample individual who responds "no."

Descriptive Statistics of variables in Analysis					
Variable	Mean	Std. Deviation	Maximum	Minimum	
Bicycle theft at home	0.43	.50	.00	1.00	
Household-level variable					
House type	0.09	.28	.00	1.00	
Household income	1.91	.91	1.00	6.00	
Number of household-owned bicycles	2.00	1.00	.00	6.00	
Number of household members 18 or over	1.90	.97	.00	7.00	
Often no one at home	3.26	1.29	1.00	5.00	
Neighbor watch	1.77	1.09	1.00	5.00	
Neighborhood-level variable					
Housing structure	8.76	2.63	.00	95.65	
Poverty level	0.38	.13	.06	0.70	
Social cohesion	9.87	.38	8.76	10.51	
Deviance and/or crime level	9.59	.52	8.35	10.60	
Rural migrant concentration	0.08	.07	.00	0.33	

Table 1 Descriptive Statistics of Variables in Analysis

Note: Statistics for the dependent and household-level variables are based on 2,472 respondents. Statistics for the neighborhood-level variables are based on N = 50.

We 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 neighborhood *j* as logit $(Y_{ij}) = \log[p_{ij}/(1-p_{ij})]$. Thus, for the individual *i* residing in neighborhood *j*, our level-1 model is

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

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

$$\beta_{oj} = \gamma_{00} + \gamma_{01} W_{1j} + \gamma_{02} W_{2j} + \dots + \gamma_{0S_0} W_{S_{0j}} + u_{0j}$$
$$= \gamma_{00} + \sum_{s=1}^{S_0} \gamma_{0s} W_{sj} + u_{0j}$$

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

Results

Our descriptive analyses indicate that 67.2 percent of respondents reported a bicycle theft from any location within past 5 years. This figure doubles the rate (30 percent) reported from the International Crime Victim Survey in Beijing about 10 years ago. Although the surveys were conducted in different cities, the significant increase may indicate that the problem of bicycle theft has become more serious. In any event, our data reveal that bicycle theft is indeed quite prevalent in contemporary urban China. The data also indicate that bicycle theft from the home is the most common form of this offense. Specifically, of those who experienced a bicycle theft, 64.3 percent reported that the bicycle was stolen from home, and thus 43 percent of all respondents in the sample reported bicycle theft at home (see Table 1).

Table 2 reports the results of multilevel analyses of the risk and protective factors for bicycle-theft victimization at home. The first model is an interceptonly model. The results indicate that bicycle theft at home within the last 5 years varies significantly across neighborhoods. Thus, in addition to being widespread, bicycle theft is ecologically structured in the city of Tianjin.

The second model includes the household-level variables. The results show that the measure of house type has a significant negative effect on the risk of bicycle theft at home ($\beta = -0.67$), meaning that residents who lived in row houses were less likely to experience bicycle theft than those who resided in apartment buildings. This finding supports our hypothesis. The measure of number of adult household members also has a significant and negative effect on the risk of bicycle theft at home within the last 5 years $(\beta = -0.11)$. The coefficient indicates that the more adult members there are in the household, the lower is the theft risk. This is consistent with the role of home guardianship in the lifestyle-exposure and routine-activities perspectives. Household income also yields a significant coefficient, but the sign is negative rather than positive ($\beta = -0.14$). We speculated that household income would be a useful proxy for target attractiveness on the grounds that wealthier households would have higher quality and more valuable bicycles and thus would be at a high risk of theft. Contrary to theoretical expectations, households with higher incomes have a lower risk of victimization. The other household-level variables do not yield any significant coefficients. Overall, the household-level variables explain about 20 percent of the variance in bicycle-theft victimization across neighborhoods.⁷

The third model in Table 2 includes both household-level and neighborhoodlevel contextual variables. The effects of household-level variables are essentially unchanged when these additional variables are entered into the model.

	Model			
Variable	1	2	3	
Fixed effects				
Intercept	-0.27**	0.28	-0.26	
L	(0.06)	(0.15)	(1.70)	
Household-level variable				
House type	67**	67**	72 [†]	
••		(.22)	(.39)	
Household income		14**	11*	
	(.)	(.05)	(.05)	
Number of household-owned bicycles		.06	.07	
		(.05)	(.05)	
Number of household members 18 and over		11*	11*	
		(.05)	(.05)	
Often no one home		.03	.03	
	(.03)	(.03)	(.03)	
Neighbor watch		04	04	
0		(.04)	(.04)	
Neighborhood-level variable			· /	
Housing structure			00	
0			(.00)	
Poverty level			1.02*	
5			(.43)	
Social cohesion			.27	
			(.16)	
Deviance and/or crime level			.26*	
			(.12)	
Rural migrant concentration	20		20	
6			(.93)	
Random effects (intercept, τ_{00})			<pre> /</pre>	
σ	.096	.073	.054	
Chi-square	105.039**	90.488**	71.847**	

Table 2 Hierarchical Logistic Regressions of Bicycle Theft at Home [AU: STD DEVS IN PARENTHESES?]

* p < .05; ** p < .01 (two-tailed tests); [†]p < .05 (one-tailed test)

The measures of house type, household income, and number of adult household members remain significant, although the effect of household income is reduced slightly, as is significance for house type. Two neighborhood contextual variables emerge as significant factors. Consistent with our hypothesis, neighborhood poverty level has a significant positive effect on the risk of bicycle theft at home within the last 5 years ($\beta = 1.02$). Residents in poor neighborhoods, where features of the environment inhibit guardianship, exhibit higher risk of bicycle theft. The measure of the level of neighborhood deviance and crime also yields a significant positive coefficient ($\beta = 0.26$). This finding supports the hypothesis that proximity to potential offenders is related to high risk of bicycle-theft victimization. The other three neighborhood contextual variables—housing structure, social cohesion, and rural migrant concentration—do not have significant effects. Nevertheless, the two significant contextual variables combine to account for about 20 percent of the variance of bicycle theft at home across neighborhoods.

Discussion and Conclusion

The present study has discussed the social and legal aspects that make bicycles attractive and vulnerable crime targets in the context of contemporary urban China. These aspects include the availability, utility, and monetary value of bicycles as well as the difficulty in securing bicycles, given the Chinese social and legal setting. The study has also applied the lifestyleexposure and routine-activities theories to assess the risk and protective factors for the Chinese experience of bicycle-theft victimization. The assessment has focused on target attractiveness, guardianship, and exposure to potential offenders at both the household and neighborhood levels. The results are generally consistent with theoretical expectations. House type (row houses), number of adult household members, neighborhood poverty level, and neighborhood deviance and/or crime level are significantly related to the risk of bicycle theft at home in contemporary urban China. These significant variables are indicators of capable guardianship at either household or neighborhood level, or indicators of proximity to potential offenders.

We also observe one anomalous finding. Household income is negatively related to victimization risk in bicycle theft, contrary to the premise that high income is associated with target attractiveness. Perhaps high-income households have security options to protect their bicycles not captured in our models, and thus income reflects guardianship as well as target attractiveness, with the former outweighing the later.

Overall, the significant risk and protective factors at household and neighborhood levels account for about 40 percent of the variance of bicycle theft across neighborhoods in the city of Tianjin, China. Although this is a nontrivial percentage, a large portion of the variance remains unexplained. This certainly calls for further research from different perspectives with different analytical strategies.

Most Western studies have used the lifestyle-exposure and routine-activities theories to study victimization risk for serious crimes such as burglary or robbery. Bicycle theft is a relatively minor crime, although it is a serious public concern in China. The findings from our multilevel analyses demonstrate the utility of lifestyle-exposure and routine-activities theories for explaining minor crimes such as bicycle theft. The results have also shown that factors at the household and neighborhood levels seem to have equal weights in accounting for the risk of bicycle theft at home for our models. These findings underscore the importance of multilevel analysis in the application of the lifestyle-exposure and routine-activities theories in a different social context.

The null effect for the measure of social cohesion on the risk of bicycle theft is somewhat surprising given the long-standing view that social cohesion as a manifestation of strong social organization is likely to inhibit criminal activity. However, recent research in the United States has pointed to "paradoxical" processes linking social organization with crime (Browning, Feinberg, and Dietz 2004; Patillo 1998; Patillo-McCoy 1999). This research suggests that although social networks and social cohesion can enhance social control, they can also facilitate criminal activity. In addition, it is important to recognize that bicycle theft is a relatively minor offense that is remarkably widespread in urban China. Recall that over two thirds of the respondents reported the loss of a bicycle within the time frame under investigation. As noted earlier (see endnote 3), analyses of victimization risk for the more serious and infrequent household crime of burglary in Tianjin reveal the expected inhibiting effect of a measure of collective efficacy, which incorporates indicators of social cohesion (Zhang, Messner, and Liu forthcoming). The effects of some other measures at both the household and neighborhood level on burglary also differ across offenses (e.g., the positive effect of poverty on bicycle theft does not emerge for burglary, whereas the effects of income are contrary across offenses). These findings suggest that bicycle theft might in some respects be a unique type of victimization in China with distinctive causal dynamics. Further theorizing is called for to explain why the effects of household-level and neighborhoodlevel factors apparently differ for the relatively unique crime of bicycle theft in comparison with those for more serious offenses typically studied in Western research.

We recognize that there are limitations associated with our analyses. In multilevel research in the United States, measures of structural characteristics of neighborhoods are typically based on census tract data. The smallest jurisdiction with census data in Tianjin, however, is the city district, which is quite large. All of the neighborhood variables are accordingly measured with survey estimates and are thus subject to sampling error. In addition, our survey was conducted on a modest budget that precluded implementation of procedures that have greatly enhanced the validity of large-scale efforts such as the National Crime Victimization Survey. Our sample size is limited, and it has not been feasible to conduct multiple administrations to generate bounded interviews. The extent and nature of biases due to memory failure or telescoping are unknown. The results of the analyses must thus be regarded as an initial effort to probe into victimization in urban China with an imperfect but unique data source.

Bearing in mind these methodological caveats, our analyses demonstrate the applicability of the lifestyle-exposure and routine-activities theories to explain a relatively minor but important offense—bicycle theft—in contemporary urban China. This effort is valuable because it allows us to assess the generalizability of theories developed and tested in the West. However, another important task for comparative criminology is to conceptualize new variables and formulate novel theoretical propositions that have not been studied in Western criminology from observations of social processes in relatively unexplored sociocultural contexts. We encourage criminologists to pursue both forms of inquiry with data for China and other non-Western countries.

Notes

1. One exception is the 1994 International Crime Victim Survey (ICVS) in Beijing. The ICVS data are valuable, but they are limited in important respects. Since the 1990s Chinese society has experienced profound changes, and the ICVS data may not be relevant to current conditions. In addition, the survey has only a few household and neighborhood variables for analysis of the risk of bicycle-theft victimization.

2. Bakken (2005:57) cautions against "alarmist" accounts of the consequences of reform for crime in China, observing that the levels of crime are relatively low in international perspective. However, though Chinese crime rates might not stand out relative to other nations at similar stages of development, these rates have increased dramatically in comparison with the very low levels of the prereform era.

3. We initially intended to apply an integrated theoretical perspective that draws upon "neosocial disorganization theory" as well as the routine-activities/lifestyle-exposure perspective to explain variation in risks of bicycle theft (Miethe and McDowall 1993, Miethe and Meier 1994; Rountree and Land 2000). "Neosocial disorganization theory" has attempted to explicate the types of social control linking structural conditions of neighborhoods with levels of crime. These mechanisms include strong social ties (see the "systemic model" of crime as formulated by Bursik and Grasmick 1993), collective efficacy (Sampson et al. 1997; Sampson, Morenoff, and Gannon-Rowley 2002), and public control (Velez 2001). In a previous analysis of household burglary based on the same dataset for Tianjin, an indicator of collective efficacy (an index combining social cohesion with a measure of the willingness of neighbors to intervene

to solve problems) and an indicator of public control (visibility of officers from the local police station) exhibit the expected negative effects on victimization risk (Zhang et al. forthcoming). Our preliminary analyses of bicycle theft, in contrast, revealed nonsignificant effects of measures of collective efficacy and public control on bicycle theft from home. As a result, we have shifted our thinking to an analytical framework with variables that are associated with people's routine activities and features of the surrounding physical and social environment. These discrepant findings suggest that the household and neighborhood determinants of victimization risk vary by offense. We return to this issue below.

4. See Osgood and Anderson (2004) for a discussion of the distinction between compositional and contextual effects and the utility of hierarchical linear modeling for distinguishing between these effects.

5. The research team consisted of the authors and researchers from the Tianjin Academy of Social Sciences. We are especially grateful to Zhou Lu, former Director of the Crime Research Center at the Tianjin Academy of Social Sciences, for his expert assistance with all major phases of the research.

6. Respondents who reported victimization within the past 5 years were also asked whether any victimization had occurred within the past year. Results based on the 1-year recall period are highly similar to those for the 5-year period. Also, bicycle ownership in Tianjin is very common, and it is quite rare for a household not to own bicycles. There is thus no need to screen respondents for bicycle ownership.

7. For exploratory purposes, we have also estimated random slope models for the householdlevel variables. The results indicate that the effects of house type (row house versus other) and household income exhibit significant variation across neighborhoods. In view of these findings, we have also examined cross-level interactions to determine whether any of the neighborhood-level variables help explain this variation. One cross-level interaction is significant: the negative effect of household income is attenuated in neighborhoods characterized by high levels of deviance and crime. These results are consistent with Rountree, Land, and Miethe's (1994) general conclusion based on data for Seattle that neighborhood factors can condition the impact of crime opportunity factors on victimization risk. Further theorizing and research on differential effects of routine-activities and lifestyle-exposure variables across neighborhoods within the Chinese context are important topics for future research.

References

- Bakken, Borge. 2005. "Comparative Perspectives on Crime in China." Pp. 57–88 in Crime, Punishment, and Policing in China, edited by Borge Bakken. Oxford, UK: Rowman & Littlefield.
- Bennett, Trevor and Richard Wright. 1984. Burglars on Burglary: Prevention and the Offender. Williston, VT: Gower.
- Brantingham, Paul L. and Patricia J. Brantingham. 1981. "Notes on the Geometry of Crime." Pp. 1–18 in *Environmental Criminology*, edited by Paul L. Brantingham and Patricia J. Brantingham. Beverly Hills, CA: Sage.
- Brown, Barbara B. and Irwin Altman. 1981. "Territoriality and Residential Crime: A Conceptual Framework." Pp. 19–35 in *Environmental Criminology*, edited by Paul L. Brantingham and Patricia J. Brantingham. Beverly Hills, CA: Sage.

- Browning, Christopher, Seth L. Feinberg, and Robert D. Dietz. 2004. "The Paradox of Social Organization: Networks, Collective Efficacy, and Violent Crime in Urban Neighborhoods." *Social Forces* 83:503–534.
- Buck, Andrew J., Simon Hakim, and George F. Rengert. 1993. "Burglar Alarms and the Choice Behavior of Burglars: A Suburban Phenomenon." *Journal of Criminal Justice* 21:497–507.
- Bursik, Robert J., Jr. and Harold G. Grasmick. 1993. *Neighborhoods and Crime: The Dimensions of Effective Community Control.* Lexington, MA: Lexington Books.
- Cao, Liqun and Yisheng Dai. 2001. "Inequality and Crime in China." Pp. 73–88 in *Crime and Social Control in a Changing China*, edited by Jianhong Liu, Lening Zhang, and Steven F. Messner. Westport, CT: Greenwood.
- China National Bureau of Statistics. 2000a. *China Social Statistics*. Beijing, China: China Statistics Press.

-----. 2000b. China Statistical Yearbook. Beijing, China: China Statistics Press.

- China Supreme Court. 1998. "Circular of Defining Values of Larceny and Theft for the Severity of Penalty." In *Law Yearbook of China*, *1999*, Editorial Committee of Law Yearbook of China. Beijing, China: Law Yearbook of China Press.
- Cohen, Lawrence E. and Marcus Felson. 1979. "Social Change and Crime Rate Trends: A Routine Activity Approach." American Sociological Review 44:588–608.
- Curran, Daniel J. 1998. "Economic Reform, the Floating Population, and Crime." Journal of Contemporary Criminal Justice 14:262–80.
- "Have You Had Any Bicycles Stolen?" 2001. Beijing Evening News, October 30, p. 6.
- Hindelang, Michael S., Michael Gottredson, and James Garofalo. 1978. Victims of Personal Crime. Cambridge, MA: Ballinger.
- Holmes, Ronald M. and Stephen T. Holmes. 1996. *Profiling Violent Crimes*. Thousand Oaks, CA: Sage.
- Keister, Lisa A. and Victor G. Nee. 2000. "The Rational Peasant in China: Flexible Adaptation, Risk Diversification, and Opportunity." *Rationality and Society* 13:33–69.
- Kershaw, Chris, Tracey Budd, Graham Kinshott, Joanna Mattinson, Pat Mayhew, and Andy Myhill. 2000. *The 2000 British Crime Survey*. Home Office Statistical Bulletin 18/00. London: Home Office.
- Kesteren, John van, Patricia Mayhew, and Paul Nieuwbeerta. 2000. Criminal Victimisation in Seventeen Industrialised Countries: Key Findings from the 2000 International Crime Victims Survey. Onderzoek en beleid. The Hague: Justitie, Wetenschappelijk Onderzoeken Documentatiecentrum.
- Editorial Committee of Law Yearbook of China. 2000. *Law Yearbook of China*. Beijing, China: Law Yearbook of China Press.
- Liu, Jianhong and Steven F. Messner. 2001. "Modernization and Crime Trends in China's Reform Era." Pp. 3–22 in *Crime and Social Control in a Changing China*, edited by Jianhong Liu, Lening Zhang, and Steven F. Messner. Westport, CT: Greenwood.
- Ma, Guoan. 2001. "Population Migration and Crime in Beijing, China." Pp. 65–72 in *Crime and Social Control in a Changing China*, edited by Jianhong Liu, Lening Zhang, and Steven F. Messner. Westport, CT: Greenwood.
- Miethe, Terance D. and David McDowall. 1993. "Contextual Effects in Models of Criminal Victimization." Social Forces 71:741–59.
- Miethe, Terance D. and Robert F. Meier. 1994. Crime and Its Social Context: Toward an Integrated Theory of Offenders, Victims, and Situations. Albany, NY: SUNY Press.

- Miethe, Terance D., Mark C. Stafford, and J. Scott Long. 1987. "Social Differentiation in Criminal Victimization: A Test of Routine Activities/Lifestyle Theories." *American Sociological Review* 52:184–94.
- Mustaine, Elizabeth Ehrhardt and Richard Tewksbury. 1998. "Predicting Risks of Larceny Theft Victimization: A Routine Activity Analysis Using Refined Lifestyle Measures." *Criminology* 36:829–57.
- Nieuwbeerta, Paul. 2002. "Introduction." Pp. 1–10 in Crime Victimization in Comparative Perspective: Results from the International Crime Victims Survey, 1989–2000, edited by Paul Nieuwbeerta. The Netherlands: Boom Juridische uitgevers.
- Osgood, D. Wayne and Amy L. Anderson. 2004. "Unstructured Socializing and Rates of Delinquency." *Criminology* 42:519–49.
- Patillo, Mary E. 1998. "Sweet Mothers and Gangbangers: Managing Crime in a Black Middle-Class Neighborhood." Social Forces 76:747–74.
- Patillo-McCoy, Mary E. 1999. Black Picket Fences. Chicago: University of Chicago Press.
- "Police Handing Back Stolen Bicycles." 2002. Chutian Daily, July 20, p. 5.
- Rhodes, William M. and Catherine Conley. 1981. "Crime and Mobility." Pp. 166–82 in *Environmental Criminology*, edited by Paul L. Brantingham and Patricia J. Brantingham. Beverly Hills, CA: Sage.
- Rengert, George F. and John Wasilchick. 1985. Suburban Burglary: A Time and Place for Everything. Springfield, IL: Charles Thomas.
- Rojek, Dean G. 1996. "Changing Directions of Chinese Social Control." Pp. 234–49 in Comparative Criminal Justice: Traditional and Nontraditional Systems of Law and Control, edited by Charles B. Fields and Richter H. Moore, Jr. Prospect Heights, IL: Waveland Press.
- Rountree, Pamela Wilcox and Kenneth C. Land. 2000. "The Generalizability of Multilevel Models of Burglary Victimization: A Cross-City Comparison." *Social Science Research* 29:284–305.
- Rountree, Pamela Wilcox, Kenneth C. Land, and Terance D. Miethe. 1994. "Macro–Micro Integration in the Study of Victimization: A Hierarchical Logistic Model Analysis across Seattle Neighborhoods." *Criminology* 32:387–414.
- Sampson, Robert J., Jeffrey D. Morenoff, and Thomas Gannon-Rowley. 2002. "Assessing 'Neighborhood Effects': Social Processes and New Directions in Research." *Annual Review of Sociology* 28:443–78.
- Sampson, Robert J., Stephen W. Raudenbusch, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 15:918–24.
- Sampson, Robert J. and John D. Wooldredge. 1987. "Linking the Micro- and Macro-Level Dimensions of Lifestyle-Routine Activity and Opportunity Models of Predatory Victimization." *Journal of Quantitative Criminology* 3:371–93.
- Smith, Douglas and G. Roger Jarjoura. 1989. "Household Characteristics, Neighborhood Composition, and Victimization Risk." *Social Forces* 68: 621–40.
- Solinger, Dorothy J. 1999. "Demolishing Partitions: Back to Beginnings in the Cities." *China Quarterly* 159:629–39.
- "Solving the Problem of Bicycle Theft." 2001. Beijing Daily, July 7, p.4.
- Taylor, Michael and Claire Nee. 1988. "The Role of Cues in Simulated Residential Burglary: A Preliminary Investigation." *British Journal of Criminology* 28:396–401.

"The Problem of Bicycle Theft." 2000. Law Daily, December 20, p. 6.

- Tseloni, Andromachi and Graham Farrell. 2002. "Burglary Victimization across Europe: The Roles of Prior Victimization, Micro and Macro-Level Routine Activities." Pp. 141–61 in *Crime Victimization in Comparative Perspective: Results from the International Crime Victims Survey, 1989-2000*, edited by Paul Nieuwbeerta. The Netherlands: Boom Juridische uitgevers.
- Urban Transport Center. 2004. "The Patterns of Residents' Transportation Means in Several Major Chinese Cities." Retrieved January 2004 (http://www.chinautc.com/data/028.asp)
- Velez, Maria B. 2001. "The Role of Public Social Control in Urban Neighborhoods: A Multilevel Analysis of Victimization Risk." *Criminology* 39:837–62.
- Whyte, Martin K. and William L. Parish. 1984. Urban Life in Contemporary China. Chicago: University of Chicago Press.
- Wilsem, Johan van, Nan Dirk de Graaf, and Karin Wittebrood. 2002. "Variations in Cross-National Victimization." Pp. 119–40 in Crime Victimization in Comparative Perspective: Results from the International Crime Victims Survey, 1989-2000, edited by Paul Nieuwbeerta. The Netherlands: Boom Juridische uitgevers.
- Wittebrood, Karin and Nieuwbeerta Paul. 2000. "Criminal Victimization during One's Life Course: The Effects of Previous Victimization and Patterns of Routine Activities." *Journal* of Research in Crime and Delinquency 37:91–112.
- Zhang, Lening, Steven F. Messner, and Jianhong Liu. Forthcoming. "A Multilevel Analysis of the Risk of Household Burglary in the City of Tianjin, China." *British Journal of Criminology*.
- Zhou, Lu, and Mei Cong. 2001. "Criminology in China: Perspectives and Development." Pp. 57–64 in *Crime and Social Control in a Changing China*, edited by Jianhong Liu, Lening Zhang, and Steven F. Messner. Westport, CT: Greenwood.

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