Article

Traveling Alone or Together? Neighborhood Context on Individual and Group Juvenile and Adult Burglary Decisions

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Abstract

Neighborhood characteristics are important considerations when offenders make targeting decisions. Movement patterns among adults and juveniles vary widely, which impacts both the number of crime opportunities and the range of neighborhoods to which an offender is exposed. We test whether offending patterns among adult and juvenile burglars vary based on distances traveled, the types of neighborhoods targeted, and whether suspects acted alone or in a group. Using discrete choice modeling, we draw upon a unique sample of cleared burglaries in a representative city in the south over a 13-year period. Results show that adult burglars consistently travel further and are more sensitive to neighborhood conditions than their juvenile counterparts, but that group participation makes little difference in target decisions.

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Introduction

A large body of literature examining the spatial distribution of crime consistently shows that offenders do not journey far from home to commit crime (e.g., Rengert et al., 1999; Rossmo, 2000; Townsley & Sidebottom, 2010). By staying close to home, offenders reduce risks associated with travel while familiarity with the area means they are more aware of criminal opportunities. Consequently, offenders are more likely to target disadvantaged neighborhoods (Bernasco & Nieuwbeerta, 2005; Ratcliffe, 2003). These neighborhoods are the ones in which offenders are more likely to live (Hesseling, 1992), so they are most aware of obstacles such as guardians that could thwart successful criminal acts. Disadvantaged neighborhoods are also particularly attractive targets because they tend to be disorganized and have lower levels of social control. This suggests that potential offenders may go out of their way to target disadvantaged or heterogeneous neighborhoods, where the risk is lower. However, the distance an offender can travel varies by age (e.g., Bernasco & Block, 2009; Bernasco & Nieuwbeerta, 2005; Townsley et al., 2015), and younger offenders' may have fewer target options as their lack of transportation constrains their movements. This suggests that the salience of neighborhood factors might vary between adults and juvenile offenders.

Indeed, adult offenders may have wider activity and awareness spaces given that employment may necessitate a longer commute from home and adults have legal opportunities to drive. Activity spaces, or the areas defined by individuals' routine activities as they live, work, and socialize, are embedded within larger awareness spaces, the geographic spaces of which one is cognizant and can scour for criminal opportunities (Brantingham & Brantingham, 1993). The awareness of such opportunities then, is likely dictated by age. Youth are less mobile, and those under 16 do not have legal opportunities work or drive, which may narrow their activity spaces and subsequently, their awareness of criminal opportunities (Brantingham & Brantingham, 1995; Drawve et al., 2015). Given the more limited spatial movements of juveniles relative to adults, they may be less discriminating of the risks associated with the social environment when an opportunity arises, instead, capitalizing on any opportunity that becomes available. Beyond travel distance or looking at specific targets such as schools or transportation hubs (e.g., Johnson & Summers, 2015), however, few studies have directly compared the *types* of neighborhoods targeted between adults and juveniles.

The relative influence of neighborhood conditions on target decisions may be further complicated depending on whether an individual is engaging in

crime alone or with others as part of a group. Group offenders may travel further given that the individuals who comprise the group may have different or larger non-overlapping awareness spaces (Lammers, 2018; Van Daele, 2008; Vander Beken & Van Daele, 2011). Further, groups of offenders may be more easily detected, so burglar groups may consciously target more disorganized neighborhoods than solo offenders. Prior studies of residence-to-crime distances have either excluded groups of offenders (e.g., Clare et al., 2009; Townsley et al., 2015), have ignored it (e.g., Bernasco, 2010a; Menting et al., 2016), or did not distinguish between co-offenders and offenders (e.g., Chamberlain & Boggess, 2016; van Sleeuwen, Steenbeek et al., 2021). The dearth of information pertaining to the types of neighborhoods targeted and co-offending is particularly problematic when distinguishing between adult and juvenile groups, as juveniles typically offend with peers (Carrington, 2009; Reiss & Farrington, 1991; Stolzenberg & D'Alessio, 2008).

The current study assesses how neighborhood socioeconomic and demographic characteristics might differentially influence which neighborhoods are ultimately selected for crime between adults and juveniles, and whether group-offending dynamics alter these selections.[1] In this study, we use a valuable dataset comprised of all suspects arrested for burglary over a 13-year period in Tampa, Florida. We separate offenders by age and group affiliation: juvenile solo offenders, juvenile group offenders, adult solo offenders, and adult group offenders.[2] We focus on burglary as it is an instrumental crime that may necessitate a higher level of awareness prior to commission and less likely to be motivated by emotion than homicide or assault. To predict the probability that an offender targets a specific neighborhood, we use discrete choice modeling, and compare patterns of neighborhood selection between adults aged 18 or older to juveniles under age 18 and across solo versus group offenses.

Theoretical Frameworks

Structural conditions of neighborhoods may make them more attractive to potential offenders. Disorganized neighborhoods often have higher crime rates, as factors such as concentrated poverty and residential instability weaken interpersonal social connections (e.g., Krivo & Peterson, 1996; Sampson & Groves, 1989). The strength of these connections is the foundation for informal social control, or ability of a neighborhood to collectivize to address problems such as crime. Weak social connections also undermine residents' abilities to distinguish between who belongs in the

community and makes them less likely to intervene if they observe criminal behavior (i.e., collective efficacy is low) (Sampson et al., 1997). Disorganized neighborhoods also tend to be disordered: Disorderly neighborhoods may make attractive targets because residents' apparent lack of concern for disorder signifies to potential offenders that there may also be an analogous lack of concern for more serious offenses, such as burglary. This suggests that disadvantaged neighborhoods attract offenders who perceive their risk of observation or apprehension to be low (St. Jean, 2007). Indeed, prior research has shown that burglars are more likely to target neighborhoods that are residentially unstable (Bernasco et al., 2015; Johnson & Summers, 2015) or ethnically (Bernasco & Luykx, 2003; Bernasco & Nieuwbeerta, 2005) or economically heterogenous (Evans, 1989; Frith et al., 2017; Johnson & Summers, 2015 suggests that burglars prefer to target lower-income neighborhoods over middle-class ones.

Offenders may also be more likely to target disadvantaged neighborhoods because they live in these areas (Hesseling, 1992; Law & Quick, 2013) and thus the targets within them are more familiar. For example, in a large study of arrestees in the Netherlands, Bernasco (2010b) found that the odds of an area selected as a target is significantly greater if the suspect currently lives there or has lived there in the recent past. Individuals develop familiarity with a place as they travel about the routines of their lives. In doing so, individuals establish an activity space, which is comprised of nodes such as school, recreation, or work sites, and the pathways between these places. As individuals travel within their activity space, they develop an awareness space comprised of the visible locations of targets and the presence or absence of guardians, including target-hardening strategies such as surveillance systems or locked fences, which factor into the decision where and when to commit crime. According to crime pattern theory, crimes occur near the nodes as targets/victims and potential offenders intersect in time and space (Brantingham & Brantingham, 1993; Ratcliffe, 2006) in places lacking capable guardianship.

Crime pattern theory asserts then that offenders may be most aware of crime targets within closer proximity to their homes, contributing to a distance decay model of site selection. That is, the likelihood of an offender selecting a target decreases as the geographic distance to the target increases (Rengert et al., 1999). Potential offenders may not be aware of distal targets and nearby target selection also minimizes effort in line with Zipf's (2016) least effort principle. Indeed, a large body of work establishes that offenders do not travel far from their residences to commit crimes (Bernasco, 2010b; Bernasco & Nieuwbeerta, 2005; Townsley et al., 2015), although the distance may be greater for property offenses (Ackerman & Rossmo, 2015; Rossmo, 2007). For example, Menting et al.'s (2020) survey of 78 offenders revealed

that the neighborhood of residence and the nearby neighborhoods were the most frequently targeted. Recent research has found median distances of 4.2 miles for violent crimes and 5.7 miles for property crime, though the median distance for burglary is significantly lower (2.5 miles) (Ackerman & Rossmo, 2015). Research generally has found that offenders are willing to travel to take advantage of attractive targets, such as retail businesses, drug and prostitution markets, and neighborhoods with higher home ownership and single-family dwellings (Bernasco & Block, 2009; Bernasco & Luykx, 2003; Bernasco & Nieuwbeerta, 2005). This is in line with Felson's (2006) argument that individuals are willing to "forage" further "if additional booty makes it worth their while" (p. 265) (see also Morselli & Royer, 2008). However, awareness patterns and willingness to forage may vary based on whether the perpetrator is an adult or a juvenile.

Juveniles Versus Adults

Offending patterns of juveniles differs from adults (Johnson & Summers, 2015). Prior research shows that juvenile offenders typically do not travel as far as older offenders (Phillips, 1980; Snook, 2004). Bernasco and Nieuwbeerta (2005) found that for youth, the odds of a neighborhood being targeted for burglary increases by a factor of 2.22 for each kilometer (0.62 miles) closer to home; for adults, each kilometer a neighborhood is closer to home translated into an increase by only 1.67 times. Importantly, however, there was no significant difference between these two effect sizes, leading the authors to conclude that the influence of target proximity to home is similar for adults and juveniles. However, that conclusion may be specific to The Hague. Townsley et al. (2015) found that youth in Birmingham, UK and Brisbane, AU were significantly more heavily influenced by target proximity to home than adults, but the same study replicated the non-significant finding from The Hague in Bernasco and Nieuwbeerta (2005). Indeed, much of the research on juvenile travel to crime has found that their range is fairly constrained (e.g., Gabor & Gottheil, 1984; Weisburd et al., 2009), but there is limited research on American youth, who may have different behavioral patterns than their international peers.

Younger offenders may select targets closer to home because they are less cognizant of the opportunities outside of their proximate environment (Snook, 2004). As awareness space grows with age and experience, potential offenders may be more willing to travel for crime. Indeed, transportation access is significantly associated with delinquency generally (e.g., Anderson & Hughes, 2009) and plays a large role in determining how far youth travel from home to offend (e.g., Bichler et al., 2012). Compared to adults, Snook

(2004) found that young offenders (under 15) without a vehicle traveled a median .62 miles to commit burglary, whereas older offenders with vehicle access traveled over a mile. Bichler et al. (2011) found that youth who were reliant on "sweat" modes of transportation (i.e., walking, bicycles, or skateboards) spent more time closer to home than youth with access to vehicles. Further, public transit may not be a ready substitute for the lack of a vehicle; in many areas, public transit lines does not connect to disadvantaged areas (Giuliano, 2005; McKenzie, 2013), leaving residents geographically isolated or reliant on buses, which do not make for quick getaways.

Juveniles' routine activities and the types of places that form juveniles' activity spaces may also be different than those of adults (Baudains et al., 2013). Young people may be more likely to congregate at friends' houses, malls or shopping centers, or street corners, which may influence their awareness space differently than adults whose awareness space may be more limited to home and work, particularly if travel to places of employment is further than the distance a youth travels to school. Additionally, offenders are more likely to target areas that they visit on a regular schedule (van Sleeuwen, Ruiter et al., 2021), which suggests that standard school hours may specifically affect juvenile target selections. Notably, however, a recent study in China found no relationship between the presence of a school in a neighborhood and the likelihood that it would be targeted for theft (Song et al., 2019), and Lammers (2018) found the same for felonies more generally. Other nonschool locations then, may be more relevant. In a study of juvenile "hangouts," Bichler et al. (2011) found that youth traveled only 1.5 miles on average to their primary hang out location, sites from which youth often offend (Bernasco, 2019; Curtis-Ham et al., 2020). The findings of Drawve et al. (2015) show significant overlap between youth loitering hotspots and youth residential burglary locations.

Youth may also be drawn to certain types of neighborhoods, particularly ones that minimize social distance (Schaefer, 2012). For example, socially disorganized neighborhoods may provide anonymity, which may be of particular concern to juvenile offenders who are less experienced burglars. Additionally, socially disorganized neighborhoods are also characterized by higher levels of family disruption, and this lack of supervision in a neighborhood may empower juveniles to engage in property crimes like burglary with little risk of being caught. Indeed, Law and Quick (2013) showed that juveniles were more likely to offend in socially disorganized areas, namely those characterized by high rates of government financial assistance, residential instability, and racial/ethnic heterogeneity, although they did not directly compare these patterns to adults. More experienced adult offenders, however, may specifically target more affluent areas even if they are further away. In

one of few studies to explicitly compare juveniles and adults, Liu et al. (2018) found that adult burglars target different types of neighborhoods than younger ones (ages 11–18). Younger burglars were significantly more likely than adult burglars to select targets in areas with a high proportion of rental housing, indicative of more residential instability; whereas adult offenders, but not juveniles, selected targets with lower rental costs (an indicator of economic disadvantage) and greater percentages of young adults and those without an advanced degree. Given the dearth of research that compares target site selection between juveniles and adults, there is no clear-cut expectation in terms of the characteristics of neighborhoods that youth may be more likely to burgle relative to adults, but the mixed findings reiterate the need to disaggregate the effects of neighborhood structure on target selection for adults and juveniles and statistically compare groups.

Solo Versus Offending in Groups

Much of what is known about group versus solo residence-to-crime distances or target decisions stems from Bernasco (2006), who found no differences between group and solo offenders. Trinidad et al. (2021) came to the same conclusion for juveniles with co-offenders. The conclusion that solitary and group offenders make similar target selection decisions likely contributed to the paucity of research that specifically analyzes offender groups. Theoretically, offender groups likely have larger awareness spaces that could influence how far they travel for crime. Co-offenders can spread knowledge of criminal opportunities outside of each's individual awareness space (Curtis-Ham et al., 2020; Lantz & Ruback, 2017), which may broaden the distance offenders are willing to travel. When offenders from different neighborhoods or with non-overlapping awareness spaces join, they have a larger combined awareness space (Lammers, 2018). However, while there is some evidence that co-offenders travel further than solo offenders (Van Koppen & Jansen, 1998), other research has found the opposite (Wiles & Costello, 2000). And Lammers (2018) determined that despite larger awareness spaces, group offenders were more likely to offend in the *shared* space. This may be especially true for juveniles, who tend to be more territorial (e.g., Reiss, 1988). In a study of social ties among co-offending youth, Schaefer (2012) found most youth co-offenders live in close geographic proximity, indicating overlapping awareness spaces and constraining the location of potential criminal activity.

Offender groups may also target different types of neighborhoods than solo burglars. Since Bernasco (2006), research on co-offenders that incorporates neighborhood context focuses almost exclusively on structural elements

that are targets, such as schools, retail establishments, or single-family homes (e.g., Song et al., 2019; Trinidad et al., 2021; Vandeviver & Bernasco, 2020) or impediments to access (Frith et al., 2017). Less attention has been paid to how the social accessibility of neighborhoods may affect decision-making. For example, individual burglars may be more willing to offend in socially organized, residentially stable, or affluent areas despite the greater risk of being identified as an outsider, because it is easier for one person to hide than a group of people. Similar logic could apply to neighborhood racial composition, where race/ethnicity is considered a "social barrier." Most offenders target neighborhoods that are similar to their own race/ethnicity (e.g., Chamberlain & Boggess, 2016), but groups of offenders may more effectively target heterogeneous areas where the odds of blending in may be greater. Further, it is unknown whether groups of juveniles would make similar target selection decisions as groups of adults. Youth, more so than adults, have a tendency to co-offend (Carrington, 2009; Hoeben & Weerman, 2016). Despite such potential differences, extant research has not investigated how neighborhood social-demographic factors condition adult versus juvenile groups versus solitary offender target decisions.

Current Study

The current study expands on prior research in several ways. First, we compare how broader social and demographic characteristics influence juvenile versus adult burglary target locations above and beyond geographic distance. Prior research has almost exclusively focused on the prevalence of criminal opportunities (i.e., the number of available targets such as retail establishments or single-family dwellings nearby), but few studies have considered the larger structural characteristics such as poverty or instability that may help determine target suitability. However, given their relatively circumscribed awareness space, juveniles may be less able to discriminate with regard to the types of neighborhoods they target compared to adults. Thus, we posit that juveniles' residence-to-crime distance will be shorter than adults' distance, but that neighborhood characteristics will exhibit a *greater* influence on adult burglar patterns compared to juveniles.

Second, few residence-to-distance studies have examined whether burglaries committed as a group or individually are differentially impacted by neighborhood characteristics, and we are not aware of any that has specifically examined differences between groups of adults and groups of juvenile offenders. Group membership may increase the awareness of targets in a wider variety of neighborhoods, and this may be particularly the case for juveniles, since they have a higher likelihood of offending in groups. This

suggests that juveniles will be *more* influenced by group membership compared to adults. Additionally, engaging in crimes as a group might limit the importance of neighborhood characteristics; indeed, burglaries committed by a group may be more likely to be the product of opportunity as opposed to careful planning that occurs among individuals (Haynie & Osgood, 2005).

Data and Methods

Data

We use data from the Tampa, Florida between January 2000 and September 2012. The city police department provided data for all arrests for burglaries over a 13-year period of time, totaling 7,124 burglary incidents corresponding to 9,288 unique suspects. The data included the date and address of the incident, the date of arrest, the suspect's home address, and juvenile (younger than 18 years) or adult status (aged 18 or older). There were 4,012 adults suspected to be involved in 3,269 incidents and 2,834 juvenile arrestees involved in 1,651 arrests. For adults, 800 participated in 372 burglary incidents as part of a group; for juveniles, there were 1,403 suspects who participated in a group and were involved in 586 incidents.

We geocoded the incident and home addresses using ArcGIS 10.6. We exclude incidents with an unknown or incorrect address, addresses listing a P.O. box or correctional facility, as well as incidents where the suspect lives outside of the city boundaries.[3] Additionally, we removed two incidents that occurred more than 20 miles from a suspect's home and 262 incidents in which co-offenders were a mixed group of adults and juveniles. In doing so, we are able to directly compare potential differences between adults and juveniles who may act either alone or in groups. The final sample includes 4,920 burglary arrests nested in 6,165 suspects. To assess the potential influence of neighborhood characteristics on burglary decision making, we include demographic and economic data from the US Census for all 334 block groups in the city.[4] However, a handful of block groups were removed due to missing data on some Census variables, leaving the total number of neighborhoods analyzed at 304.

Dependent variable. Consistent with prior research utilizing spatial choice models (e.g., Bernasco, 2010b; Frith et al., 2017; Townsley et al., 2015), we employ a binary variable indicating which neighborhood a suspect chose to target for burglary. Given that a suspect can chose any neighborhood within the city, we code the block group in which the suspect committed a burglary with a 1, and assigned a value of 0 to the remaining 304 block groups.

Independent variables. We include a number of economic and demographic variables to assess how neighborhood characteristics might influence a suspect's decision to target a neighborhood, and whether those characteristics differ between juveniles and adults or co-offending status. We incorporate Census data from 2000 and 2010. To harmonize census block group boundaries over time, we normalize the 2010 data in to 2000 census block group boundaries, and then we linearly interpolate across time to account for annual changes. We include a measure of *concentrated disadvantage*, which is a factor score comprised of (1) the percentage of residents below poverty, (2) the percentage of residents unemployed, (3) the percentage of single-parent households, and (4) median income.[5] The first three variables loaded positively and the remaining variable loaded negatively. Higher values indicate greater levels of disadvantage. We capture residential stability with a factor including (1) average length of residence, (2) the percentage of households that moved into their residence within the last 5 years, and (3) the percentage of homeowners. Higher values represent greater stability.

We include a measure of *racial/ethnic heterogeneity* that was calculated using the Herfindahl Index (Gibbs & Martin, 1962; Hipp et al., 2009). The Herfindahl index uses five racial/ethnic groups and is calculated based on the following formula:

$$heterogeneity = 1 - \sum_{1}^{j=J} G_j^2$$

where G is the proportion of the population of ethnic group j out of J ethnic groups. A higher value is associated with greater racial/ethnic heterogeneity. We include a measure of the *percent occupied housing units*, as occupied units may be less likely to be targeted for residential burglary. To account for *relative economic inequality*, we employ the Gini coefficient.[6] The Gini coefficient captures income inequality as the distribution of household income in a block group relative to the distribution of income for the entire city. Gini ranges from 0 to 100 where higher values indicate greater income inequality. For more information on the Gini coefficient see Hipp (2007) or Nielsen and Alderson (1997).

Finally, we control for the racial composition of the neighborhood by including a measure of the *percent Black* residents and the *percent Latino* residents. Summary statistics are shown in Table 1 below.

Methodology

We employ a discrete choice modeling framework (*see* Bernasco & Nieuwbeerta, 2005) to determine the likelihood that a suspect will target a

Table I. Summary Statistics for Variables Used in Analysis (*n* = 6,846).

Predictors	All burglaries		Adult burglaries		Juvenile burglaries	
	Mean	St. dev	Mean	St. dev	Mean	St. dev
Distance to target neighborhood	2.75	2.68	2.86	2.79	2.59	2.52
Distance (mean centered)	0.00	3.49	0.08	3.37	0.20	3.67
Distance squared (mean centered)	12.17	22.79	11.37	20.03	13.44	26.63
Percent Black	24.96	29.29	24.19	27.63	26.14	31.77
Percent Latino	19.91	17.30	20.19	16.93	19.49	17.91
Concentrated disadvantage	0.27	1.01	0.24	0.94	0.32	1.12
Residential stability	0.00	0.47	0.02	0.49	−0.03	0.54
Ethnic heterogeneity	43.33	18.43	45.18	17.40	40.44	19.51
Percent occupied housing	90.06	8.85	90.03	8.97	90.11	8.72
Relative inequality (Gini coefficient)	40.12	7.73	40.08	7.58	40.19	7.98

specific neighborhood. Discrete choice models capture an individual's selection out of a set of finite options. In this study, a suspect has 334 neighborhoods from which to target, and the chosen neighborhood is the location where a suspect commits a burglary. An extensive body of research has employed discrete choice models to assess decisions of where to commit crimes such as burglary, robbery, theft from vehicles, or sex offenses (Ackerman & Rossmo, 2015; Johnson & Summers, 2015; Lammers, 2018). By employing a discrete choice model, we can determine whether adults and juveniles target similar types of neighborhoods and whether these vary when offenders are in groups.

An important consideration is the distance that a suspect may have to travel to access a particular neighborhood. Given that juveniles are less likely to have access to transportation, it is possible that their movement patterns may be more circumscribed and closer to home. To that end, we calculate the *Euclidean distance* in miles between a suspect's home and the 304 neighborhoods in the city using the longitude and latitude coordinates of the suspect's home address and the location of the burglary incident.[7] This gives us the residence-to-crime distance from home to the target location. Further, because prior literature has indicated a distance decay or threshold effect, where the likelihood that an

individual will select a neighborhood decreases as distance increases, we include a measure of *distance squared.* We centered our measures of distance and distance squared to minimize problems with multicollinearity. On average, suspects targeted a neighborhood that was 2.75 miles away from their home. Adults traveled slightly farther distances, averaging 2.86 miles, while juveniles traveled an average of 2.59 miles. Across all suspects, 14.6% of individuals committed a burglary in their own neighborhood; among juveniles, this occurred in 14.8% of incidents, and 14.5% of incidents involving adults.

We employ a conditional logit model to examine the probability that a particular neighborhood will be selected relative to all other remaining options (Ben-Akiva & Bierlaire, 1999). To compare probabilities between juveniles and adults and between groups and solo offenders, we use seemingly unrelated estimation using the post estimation command *suest* in Stata. The *suest* command adjusts the standard errors prior to determining statistical significance by combining the estimation results from each equation into a single parameter vector with a simultaneous covariance matrix. This allows us to account for the non-independence of arrests in the same neighborhood, as well as allows us to conduct significance testing across models using the Wald test (Boggess et al., 2018).[8] We analyze two models. First, we evaluate the likelihood of a neighborhood being selected based on the target neighborhood's distance from the suspect's home and sociodemographic characteristics between adult and juvenile suspects. In this first set of models, we treat incidents with multiple offenders as independent decision-making events, but we account for the non-independence of the observations by clustering by incident in our analysis. This is in line with prior journey to crime research (Bernasco et al., 2013; Vandeviver et al., 2015). Second, we evaluate whether the types of neighborhoods being selected varies across whether an adult or juvenile suspect participated in a group or not. In this case, we essentially split the sample based on group membership while continuing to cluster based on incident. We look for significant differences using Wald tests. In all of our models, our dependent variable is dichotomous, where a 1 is equal to the selected neighborhood and 0 represents the remaining unselected options. To facilitate comprehension and comparison to extant literature, we present both the log of the odds and the odds ratio in our results. Excluding the distance measures, all variance inflation factors (VIFs) are below 4, indicating that multicollinearity is not problematic.

Results

Neighborhood Characteristics and Adult and Juvenile Preferences

In Table 2, we assessed differences in neighborhoods targeted between adults and juveniles with regard to distance traveled and neighborhood

Table 2. Discrete Choice Model of Neighborhood Characteristics of Burglary Destination for Adults and Juveniles in Tampa, FL ($n = 304$).

Predictors	Adults		Juveniles			Wald tests
	β	OR	β	OR		
Distance (centered)	−.39549*** (0.00926)	0.6734	−.45187*** (0.01312)	0.63644		***
Distance squared (centered)	.02715*** (0.00061)	1.0275	.026562*** (0.00112)	1.026918		
Percent Black	.00018 (0.00105)	1.0002	.007899*** (0.00159)***	1.007931		***
Percent Latino	.000651 (0.0013)	1.0007	−.00114 (0.00206)	0.998863		
Concentrated disadvantage	.214861*** (0.03004)	1.2397	.092647 (0.04837)	1.097074		*
Residential stability	−.32516*** (0.07053)	0.7224	−.07188 (0.10179)	0.930645		*
Ethnic heterogeneity	.008539*** (0.00124)	1.0086	.014691*** (0.0018)	1.014799		**
Percent occupied	.010646** (0.00361)	1.0107	.009236 (0.005)	1.009279		
Inequality (Gini coefficient)	.002911 (0.00262)	1.0029	−.00347 (0.00386)	0.996535		

Note. Standard errors in parentheses.
***$p < .001$. **$p < .01$. *$p < .05$.

characteristics. We find that the residence-to-crime distance is slightly shorter for juveniles ($b=-0.452$, $OR=0.636$, $p<.001$) compared to adults (-0.395, $OR=0.673$, $p<.001$). For juveniles, for each additional mile that a neighborhood is located from his or her neighborhood, the odds of that neighborhood being selected decreases by 35%; for adults, the odds decrease 33% for each additional mile. That is, the likelihood that a suspect selects a particular neighborhood is inversely related to the distance from his home. Wald tests indicate that the difference in distance traveled between adults and juveniles is statistically different. The distance squared measure is also positive and significant for both adults ($b=0.027$, $OR=1.027$, $p<.001$) and juveniles ($b=0.026$, $OR=1.02$, $p<.001$), but according to the Wald tests, this is not a significant difference. The positive coefficient suggests that some suspects may be willing to travel much further distances for valuable targets (Chamberlain & Boggess, 2016; Vandeviver et al., 2015).

Next, we find that neighborhood characteristics related to social disorganization theory are important predictors of neighborhoods that are targeted for burglary, but there are important differences between adults and juveniles. First, several characteristics are significant predictors of adult target selection only. Neighborhoods higher in concentrated disadvantage ($b=0.215$, $OR=1.24$, $p<.001$) are significantly more likely to be targeted, while those that have greater residential stability ($b=-0.325$, $OR=0.772$, $p<.001$) are significantly less likely to be targeted. Adults are also likely to target neighborhoods with a greater percentage of occupied units ($b=0.011$, $OR=1.01$, $p<.01$), but this effect is not significantly different from the juveniles. Second, for juvenile suspects, different neighborhood factors matter. While the percentage of Black residents does not increase the likelihood that a neighborhood will be targeted by adults, juveniles are significantly more likely to target neighborhoods with a greater Black population ($b=0.008$, $OR=1.008$, $p<.001$): a 10% increase in the percentage of Black residents increases the odds of a neighborhood being targeted by 8%. Finally, although both adult and juvenile suspects are more likely to target more heterogeneous neighborhoods, the magnitude of this effect is significantly greater for juveniles ($b=0.015$, $OR=1.015$, $p<.001$) compared to adults ($b=0.0085$, $OR=1.008$, $p<.001$): a 10% increase racial/ethnic heterogeneity increases the odds that a neighborhood will be targeted by a juvenile by 15%, but only 8% by an adult.

Neighborhood Characteristics and Adult Versus Juvenile Group Status

In Table 3 below, we compare adults and juveniles based on whether or not they engaged in a burglary with a group.

Table 3. Discrete Choice Model of Neighborhood Characteristics of Burglary Destination for Adults and Juveniles based on Group Type in Tampa, FL ($n = 304$).

| | Adults | | | | Juveniles | | | | Wald tests | | | |
| | Group | | Single | | Group | | Single | | | | | |
Predictors	β	OR	β	OR	β	OR	β	OR	AGAS	JGJS	AGJG	ASJS
Distance (centered)	−.36933*** (0.02232)	0.691194	−.40312*** (0.00998)	0.668235	−.43779*** (0.01828)	0.645461	−.47038*** (0.0184)	0.624767				**
Distance squared (centered)	.027677*** (0.00149)	1.028064	.027033*** (0.00067)	1.027401	.02608*** (0.00154)	1.026423	.027279*** (0.0016)	1.027655				
Percent Black	.004697 (0.00287)	1.004708	−.00106 (0.00108)	0.998941	.006698* (0.0024)	1.006721	.009554*** (0.00183)	1.0096			*	***
Percent Latino	.002179 (0.00357)	1.002181	.000309 (0.00134)	1.000309	−.00449 (0.0032)	0.995619	.003215 (0.00233)	1.00322				
Concentrated disadvantage	.181264* (0.08336)	1.198732	.225444*** (0.03421)	1.252879	.138861 (0.07445)	1.148964	.033028 (0.05295)	1.033579				**
Residential stability	−.34697 (0.20939)	0.70683	−.31489*** (0.06875)	0.729868	−.03293 (0.1567)	0.967608	−.1201 (0.11176)	0.886833				
Ethnic heterogeneity	.015115** (0.00345)	1.01523	.006775*** (0.00128)	1.006798	.017067*** (0.00277)	1.017213	.011686*** (0.00208)	1.011754	*			*
Percent occupied	.013082 (0.01067)	1.013168	.009863** (0.00348)	1.009912	.011544 (0.0077)	1.01161	.006323 (0.00576)	1.006343				
Inequality (Gini coefficient)	.000475 (0.00713)	1.000475	.003681 (0.00268)	1.003688	−.00685 (0.00611)	0.993175	.001004 (0.0039)	1.001005				

Note. Standard errors in parentheses.
AGAS = adult group versus adult single; JGJS = juvenile group versus juvenile single; AGJG = adult group versus juvenile group; ASJS = adult single versus juvenile single.
***$p < .001$; **$p < .01$. *$p < .05$.

Looking across all models, there is no significant difference in distances traveled between groups and solo offenders for both adults (column AGAS) and juveniles (column JGJS). Indeed, Wald tests reveal only one significant difference: racial/ethnic heterogeneity exhibits a significantly different effect between adults who offend in groups ($b=0.015$, OR$=1.015$, $p<.001$) versus those who offend alone ($b=0.007$, $OR=1.007$, $p<.001$). This means that although both solo offenders and group offenders are more likely to select heterogenous neighborhoods, the odds are significantly greater for groups. Disadvantage was significant for adults who both offend alone and in groups, but Wald tests reveal this is not significantly different between groups. Residential instability and occupied housing units are only robust for adults who offend alone, but Wald tests (column AGAS) reveal that these are not significantly different from adults offending in groups, suggesting few differences in target site selection between groups of adults versus solo adult offenders. Similarly, for juveniles, although there are significant direct effects of neighborhood characteristics (e.g., percentage Black residents and racial/ethnic heterogeneity) on the probability of a neighborhood targeted, Wald tests reveal there are no significant differences between juveniles who offend in groups versus those who offend alone (column JGJS). This mimics the findings for adult suspects: more similarity than differences between group and solo offenders.

Finally, we examine our Wald tests to determine whether there are any meaningful differences between adult groups and juvenile groups (column AGJG), as well as adults offending alone and juveniles offending alone (column ASJS). Looking between groups first, only one significant difference emerges (column AGJG): Adult group offenders are more willing to target neighborhoods further away ($b=-0.37$, $OR=0.69$, $p<.001$) compared to juvenile group offenders ($b=-0.44$, $OR=0.64$, $p<.001$). There is a similar pattern when looking at adult versus juvenile solo offenders (column ASJS): adult suspects who act alone ($b=-0.40$, $OR=0.67$, $p<.001$) are more likely to target neighborhoods further away compared to juvenile suspects who act alone ($b=-0.47$, $OR=0.62$, $p<.001$). For solo offenders, there are three additional important differences between solo adult and juvenile suspects (column ASJS). First, juvenile solo offenders ($b=-0.01$, $OR=1.01$, $p<.001$) are significantly more likely to target Black neighborhoods compared to adults who act alone ($b=-0.001$, $OR=0.999$, $p=ns$). Second, adults who burgle alone are significantly more likely to target disadvantaged neighborhoods ($b=0.225$, $OR=1.25$, $p<.001$) compared to juveniles who act alone ($b=0.03$, $OR=1.03$, $p=ns$). Third, solo juvenile offenders are more likely to target racially/ethnically heterogeneous neighborhoods ($b=0.011$, $OR=1.011$, $p<.001$) compared to adults who act alone ($b=0.007$, $OR=1.007$, $p<.01$).

This provides some evidence that adult and juvenile suspects working alone prefer to target distinct types of neighborhoods.

Discussion and Conclusion

Identifying the characteristics that may make a neighborhood more vulnerable to crime has long been of interest to practitioners and criminologists. While a large body of research has found that most offenders commit crimes relatively close to home (e.g., Bernasco & Nieuwbeerta, 2005; Rengert et al., 1999; Rossmo, 2000; Townsley et al., 2015), less research has focused on how the sociodemographic characteristics of a neighborhood might increase vulnerability, and whether the relative desirability of a target neighborhood varies across adults and juveniles, and by co-offending. We find that adults and juveniles travel different distances and target different types of neighborhoods for burglary, but there are few differences between solo and group offenders (both adult and juveniles); some unique differences emerge between adults and juveniles who offend alone. We elaborate on these findings below.

First, juveniles travel *shorter* distances to engage in burglary relative to adults. This difference is across juveniles collectively, regardless of whether they engage in burglary alone or in a group, and is consistent with prior research (Bernasco & Nieuwbeerta, 2005; Gabor & Gottheil, 1984; Phillips, 1980). This may reflect the relatively circumscribed movements of youth, since juveniles likely have fewer activity nodes compared to adults, and their routine activities largely center around home, school, and peer associations (Brantingham & Brantingham, 1995; Drawve et al., 2015). As a result, the types of places that juveniles frequent are limited in number and type. Further, because juveniles generally lack the legal ability to drive or access to efficient public transportation, they are more restricted in their mobility relative to adults. This is reflected in the findings here, which suggest that juveniles may be both less aware of and unable to take advantage of targets further from home. This suggests that adults and juveniles have distinct travel patterns and coincides with prior research which shows an increase in distance traveled after an individual reaches driving age (Ackerman & Rossmo, 2015; Andresen et al., 2014; Drawve et al., 2015).

Second, adults and juveniles target different types of neighborhoods. Adults burglars are more likely to target neighborhoods with higher levels of concentrated disadvantage and racial/ethnic heterogeneity, and less likely to target neighborhoods with higher levels of residential stability. Collectively, these characteristics may help offenders gage the potential risks associated with a particular neighborhood. Indeed, disadvantaged and racially/ethnically diverse neighborhoods have lower levels of social cohesion and collective efficacy,

characteristics that increase the likelihood of neighborhood crime (Bernasco & Block, 2009; Chamberlain & Hipp, 2015). Disadvantaged neighborhoods also tend to have lower levels of residential stability, which reduces the effectiveness of informal social control (Bernasco et al., 2015; Krivo & Peterson, 1996; Sampson & Groves, 1989), and may ultimately lower the risk of apprehension. Adult burglars are also more likely to select neighborhoods with higher levels of racial/ethnic heterogeneity. Racially and ethnically diverse neighborhoods may help offenders to remain anonymous, since neighborhood residents are less likely to be able to identify outsiders or potential offenders. This is supported by prior research among robbers, who indicated that they targeted areas where they would not be watched or intercepted by residents (St. Jean, 2007). This suggests that adult burglars are sensitive to environmental factors that may alter the risk of apprehension, and that this consideration is weighed in tandem with distance and the potential value of a particular target (Bernasco & Luykx, 2003; Vandeviver et al., 2015).

In contrast, juvenile target decisions seem to be less impacted by the broader social structural characteristics of a neighborhood. Instead, only two characteristics were important for understanding which neighborhood types juveniles were most likely to target: the percentage of Black residents and racial/ethnic heterogeneity. Juveniles are more impulsive than adults (Bennett et al., 1984; Bernasco & Nieuwbeerta, 2005), which suggests that they may be less likely to weigh the risks and benefits associated with a particular target. This may be compounded by the fact that juveniles have smaller mobility patterns, and these movements are further constrained by a lack of transportation to access places further away. As a result, juveniles may take advantage of any target of opportunity within their limited awareness space, without reference to the broader social conditions that might increase the risk of apprehension. For instance, with regard to juveniles, Brantingham and Brantingham (1993) have posited that youth walking to school will take advantage of opportunities along the way, simply because of their routine activities. This underscores the notion that juveniles may be more opportunistic and impulsive in choosing targets—which may be a necessity due to their relatively limited travel patterns. Indeed, the relationship between percent Black and racial/ethnic heterogeneity may reflect the fact that these youth may live in these types of neighborhoods. Future research should assess whether juvenile burglars reside in these types of neighborhoods.

Third, target selection did not significantly differ between juvenile or adult offenders in a group and solo offenders. This aligns with prior research (Bernasco, 2006; Trinidad et al., 2021) that finds co-offending patterns largely replicate solo offense patterns. However, we found some evidence

that adult and juvenile offenders acting alone targeted distinct types of neighborhoods. Adults acting alone were more likely to target disadvantaged neighborhoods relative to juveniles acting alone, whereas solo juvenile burglars were more likely to target Black neighborhoods and those that have greater racial/ethnic heterogeneity. Notably, this replicates the previous discussion as to the types of neighborhoods adults versus youth target generally, but suggests that the differences may be driven by solo offending.

While this study makes several important contributions to research examining residence-to-crime distance between adult and juvenile burglars collectively and those working in groups, there are some limitations to the current study that should be noted. We are unable to account for individual characteristics of suspects. Controlling for information such as the race of the suspect or his criminal history might provide important insights in terms of which types of neighborhoods an individual may target. However, some research has suggested that individual attributes are less consequential compared to the broader environmental characteristics (Vandeviver et al., 2015). Additionally, we are unable to account for different land uses, which may be important for capturing crime attractors (Bernasco & Block, 2009, 2011). This may be relevant for juveniles, as the inclusion of schools and similar type institutions may be important indicators of risk (Drawve et al., 2015). We also could not determine whether a burglary target was residential or commercial, and we are unable to account for temporal variation, though target attractiveness may vary by time of day or by day of the week (Ratcliffe, 2006).

Finally, we rely on arrest data for burglaries, which on average have a clearance rate of about 14% in the US (Weisel, 2002). In Tampa, however, the clearance rate is much higher, around 20% (Kaste, 2015). As a result, we have no information on the majority of burglaries that transpire but were not cleared by arrest; a limitation also suffered by the majority of prior residence-to-distance studies. Our results generally find that burglars minimize the risk of detection by targeting locations nearby and where social control is low. It is possible that we are underestimating burglars who target locations further way, and therefore less likely to be apprehended. However, prior research has found that locational and neighborhood characteristics are not predictive of clearance rates (Bernasco & Nieuwbeerta, 2005; Bernasco et al., 2013), while others have found that the spatiotemporal patterns of solved and unsolved offenses are similar (Johnson et al., 2009). Thus, although we cannot account for all of the burglaries in our study site, there is little evidence that their omission would impact our findings.

While prior research has consistently found that adults and juveniles travel different distances to commit crime, few studies have looked at how

neighborhood context may affect those patterns. This study has shown that not only are neighborhood characteristics important above and beyond distance, but that their relative influence varies across adults and juveniles. Indeed, neighborhood structure is particularly salient for adult offending decisions, who may be more experienced and more likely to plan in advance when targeting certain types of neighborhoods committed further away. For juveniles, the allure of proximate opportunities may outweigh other considerations that may deter or attract older offenders. From a policy perspective, this suggests a two-pronged approach. To reduce burglaries committed by adults, practitioners should work with community members to strengthen social ties among residents to foster greater vigilance among residents. One method to consider would be using online networking to connect residents, which has been shown to positively affect face-to-face relationships and increase the number of people one knows in the community (Mesch & Levanon, 2003). Additionally, local governments can encourage in-person socialization by making targeted efforts to improve public common spaces, especially well-maintained parks with quality recreational facilities (Kaźmierczak, 2013), that facilitate the development of interpersonal ties. For juvenile burglars, the broader social cues of the environment do not seem to deter offending. This may be due to the fact that their narrow travel patterns reduce exposure to other neighborhoods, which may impede their ability to assess risk. This suggests that risk may need to be more obvious. While ramping up policing efforts in these communities might seem like a plausible solution, this may also have a net-widening effect. Alternatively, police could work with local community groups to provide resources that may assist residents in target hardening. This may entail providing residents with better locks, security cameras, bars on windows and doors, or other apparatuses that increases the difficulty and risk associated with a particular target (Wilcox et al., 2007). Beyond the practical implications of this study, there are empirical ones as well. Adults and juveniles exhibit a differential susceptibility to neighborhood conditions with regard to target decisions. Future research examining adult and juvenile offenders should simultaneously account for both the characteristics of the broader social environment as well as the availability of targets in a neighborhood.

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Notes

1. Although much of the literature refers to similar studies as "journey-to-crime," the vast majority focus exclusively on the distance from place of residence, which is a simplified and constrained interpretation of the actual journey to offend. Therefore, in line with recent literature (e.g., Ackerman & Rossmo, 2015; Trinidad et al., 2021) we refer to this measure as residence-to-crime distance, unless specifically referring to a study in which alternative measures were used (i.e., Menting et al., 2016).
2. A minority of groups consisting of both juvenile and adult offenders (5%) were excluded.
3. Our match rate was 89% for suspect addresses, and 98% for crime incidents. This exceeds the recommended minimum match rate of 85% suggested by Ratcliffe (2004).
4. We use block groups to define a neighborhood because these are the smallest unit available where meaningful sociodemographic data are available.
5. In ancillary models (not shown), we tested the effect of single-parent households independent of concentrated disadvantage. Prior research has found that a lack of guardianship in neighborhoods with higher percentages of single-parent households is associated with higher rates of crime, and this may be particularly salient for juveniles (Feldmeyer & Steffensmeier, 2009; Sampson & Groves, 1989). However, we detected no significant effects of single-parent households on burglary target decisions for either adults or juveniles. Therefore, we collapse our measure of single-parent households into our measure of disadvantage to improve parsimony.
6. The Gini coefficient is calculated using the following formula:

$$G = \frac{2}{\mu n^2} \sum_{i=1}^{n} ix_i - \frac{n+1}{n}$$ Where x_i represents household income, μ represents the mean income value, and households are organized in ascending values by i up to n households in the sample.

7. Distance is calculated as the distance between the location of the suspect's home address to the centroid of the block group where the incident occurred. Given that incident addresses may be reported less precisely (e.g., intersections), we believe that this approach provides the most accurate measure of distance.
8. Wald tests allow for comparisons between two groups while freeing the other parameters (Wooldridge, 2010). A significant Wald test indicates that the difference in magnitude of the two effect sizes being compared is unlikely due to chance alone. In the current study, we are testing whether there is a significant difference between each independent variable and its effect on adult versus juvenile target decisions, as well as group versus solo offending. We only present significant Wald tests when at least one of the coefficients has a significant direct effect on the dependent variable.

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