A NEIGHBORHOOD-CENTERED APPROACH TO DEVELOPMENTAL CONTEXTS:
AN APPLICATION TO SEXUAL RISKTAKING IN ADOLESCENCE AND
YOUNG ADULTHOOD

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ABSTRACT

Bridging macrosociological life course, place stratification, and social disorganization theories, this study advances a "neighborhood-centered" approach to study a core developmental context in adolescent and young adult behavior. Using four waves of data from the National Longitudinal Study of Adolescent Health (Add Health), latent class analysis, and growth curve modeling, I identify neighborhood types patterned by the intersection of three components of structural inequality—race/ethnicity, socioeconomic class, and geography—and examine how trajectories of adolescent and young adult sexual activity differ across neighborhood types Results demonstrate the complexity with which indicators of stratification intersect to shape specific neighborhood contexts, and illustrate significant variation in trajectories across neighborhood types—variation heretofore unobserved in neighborhoods research, and largely unexplained by theorized mediators. This approach extends neighborhood effects research, highlighting the social structural forces—embodied in the patterning of a finite set of neighborhood types—that anchor trajectories of risk behaviors in adolescence.

INTRODUCTION/BACKGROUND

All social phenomena are *emplaced* (Abbott 1992; Sampson 1993; Gieryn 2000), and few sociologists would argue with the notion that "place matters." This is particularly true with respect to adolescent development, given the numerous studies linking neighborhood characteristics to various indicators of child and adolescent well-being (e.g., Brooks-Gunn, Duncan, and Aber 1997; Booth and Crouter 2001; Elliott, Menard, Rankin et al. 2006). However, simply stating that place matters does not help us understand *why* place matters, *which* places matter, and *how* such places came to be in the way that we identify and understand them today (and the implications associated with this manifestation).

Neighborhoods as places are fundamentally socially constructed groups—with symbolic

and social boundaries (Lamont and Molnar 2002)—resulting (in the U.S.) from the intersection of three key social structural cleavages: race/ethnicity, class, and geographic stratification, and it is along these three cleavages that resources and opportunities are allocated. The processes of racial/ethnic, class, and geographic stratification have produced a complex patterning of neighborhoods better defined by "types" or "profiles" of characteristics (Upchurch, Aneshensel, Sucoff, and Levy-Storms 1999), yet because current research typically examines neighborhood context via single compositional items or indices of neighborhood characteristics it continues to be "variable-centered," adhering to the variables paradigm. This treats various structural characteristics as if they are independent, ignoring their intersections (Choo and Ferree 2010), neglecting how social stratification is ecologically manifested (Massey and Denton 1987; Ferraro, Shippee, and Schafer 2009), and disregarding the ways in which these neighborhood compositional characteristics (e.g., percent poverty) reflect more complex social structural processes such as access to resources and opportunities, exposure to risks, social status, position in the social hierarchy, etc.—all things that correspond to certain *types* of neighborhoods.

One method for advancing scholarship on neighborhood contexts that is more consistent with the theoretical premise of neighborhoods as socially defined places and contexts of development—and thus recognizes the intersecting processes of place stratification—is to couple the analytic benefits of multilevel modeling techniques with the ideas advanced by person-centered research. Thus a "neighborhood-centered" approach is much like a person-centered analytic approach (Cairns, Bergman, and Kagan 1998), identifying patterns (constellations) among compositional and contextual variables in the data. Here, the neighborhood is regarded as the key conceptual and analytical unit, emerging from the structural components formulating it, which operate jointly and simultaneously, and as such cannot be reduced to or understood as

isolated entities (Bergman 2009). A neighborhood-centered approach captures neighborhoods as latent constructs, representing the nexus of social structural forces manifested in the primary, interactive environments of everyday life. In order to develop more fully sociological notions of place, and to expand how and why place matters for human development, the current study focuses particularly on the patterning of neighborhoods, and their importance as contexts for individual development. Indeed, neighborhoods are a prime setting where individual outcomes are organized, and inequality can be observed in the physical environments of neighborhoods (Spencer, McDermott, Burton, and Kochman 1997), which themselves reflect the stratification of social groups and their differential access to resources, power and status (McLeod and Nonnemaker 1999).

Just as the Chicago School scholars observed that social problems were not randomly distributed across geographies, types of places themselves are not randomly distributed. When people come together in a place, generally one of two things can happen: engagement or estrangement (Gieryn 2000). The latter, estrangement, is particularly common in the U.S., which remains a highly segregated society even today. Segregation is physical, and inherently geographical; it is "…the separation of socially defined groups in space, such that members of one group are disproportionately concentrated in a particular set of geographic units" (Massey, Rothwell, and Domina 2009:74). We can attribute this spatial and social distance within the patterning of neighborhoods to three primary, interrelated forces or cleavages that continue to shape segregation and place stratification: race/ethnicity, socioeconomic class, and geography.

The research of the Chicago School urban ecologists, and particularly Shaw and McKay's (1942) social disorganization theory, has served as a critical foundation for our current research on neighborhoods. Current research on neighborhoods as contexts of development—

across substantive disciplines and outcomes of interest—remains largely grounded in a social disorganization framework, and guided by the mechanisms identified by Jencks and Mayer (1990) and Sampson and colleagues' (1997) work on collective efficacy. Low socioeconomic status, ethnic heterogeneity, and residential mobility in neighborhoods disrupt community social organization (or collective efficacy), leading to a disorganized environment which fosters crime and delinquency and the development of teenage peer groups who then facilitate delinquent subcultures. Disadvantaged communities lack the social ties (social capital) necessary to aid the adult residents in maintaining social order and socializing neighborhood youth. Disadvantaged neighborhoods may also facilitate the emergence of problem behaviors by providing a context where the likelihood of affiliating with delinquent peers is higher than in more advantaged neighborhoods.

Neighborhood Effects on Sexual Activity

One prominent mechanism through which neighborhoods are assumed to affect sexual activity is via the emergence, maintenance, and transmission of social norms that influence preferences for and meanings of sexual behaviors, such as the appropriate age of sexual debut or the acceptable number of sex partners. For instance, Wilson (1987; 1996) observed that social isolation and neighborhood disorganization create a context within which certain (deviant/subcultural) norms, attitudes, and behaviors can develop and crystallize (see also Baumer and South 2001). Given that structural characteristics of neighborhoods influence problem behaviors by exposing youth to deviant peers and facilitating the cultural transmission of attitudes and values that condone such behaviors (Haynie, Silver, and Teasdale 2006), neighborhood peers who engage in certain behaviors may act as role models, providing encouragement and opportunities for other youth to engage in similar behaviors (Browning,

Leventhal, and Brooks-Gunn 2004). This is particularly problematic in disadvantaged

neighborhoods, since youth in these contexts have sex earlier, have more partners, and use

contraceptives less often than their counterparts in more advantaged neighborhoods (Brewster

1994b; Brewster 1994a; Baumer and South 2001).

Current Study

By bridging stratification and life course theories to recognize the importance of

neighborhood context, the current study utilizes a neighborhood-centered latent class analysis

approach to capture latent types of distinct neighborhood contexts in a nationally representative

sample of adolescents. A neighborhood-centered approach explicitly recognizes the social

structural foundation of neighborhoods, allowing us to explore neighborhood effects across *all*

geographies and facilitates comparative research, extending our focus beyond poor Black urban

vs. White middle class neighborhoods. First, I contextualize and classify a typology of

neighborhoods and then second, illustrate the utility of these neighborhood typologies by

examining how adolescent risky sexual behavior differs across neighborhood types.

METHODS

Data. I used data from the National Longitudinal Study of Adolescent Health (Add

Health), a nationally representative sample of adolescents in grades 7 through 12, first conducted

between 1994 and 1995. The primary sampling frame included 80 representative high schools,

and their "feeder" middle schools, stratified by region of country, degree of urbanicity, school

type (i.e., public and private), racial/ethnic composition, and school size. Each participating

school provided a roster of all enrolled students, from which a core sample of 20,745 adolescents

was randomly selected for in-home interviews. Respondents' home addresses were geocoded and

data were appended to respondents' home address, and are included in a Contextual Database.

Respondents were surveyed again for the Wave II interview (n=14,738) one year later; the Wave III interview was conducted six years later (2001-2002), and Wave IV approximately six years after that (2007-2008), when respondents were ages 24-34.

The analyses proceeded in two stages Aim 1—developing a typology of neighborhoods, and Aim 2—comparing trajectories of sexual risk behavior across adolescent neighborhood types (and determining the extent to which the effect of adolescent neighborhood type operates through individual, peer, and family processes). Aim 1 uses data from the Wave I in-home interview, along with data from the Wave I Contextual Database (Billy, Wenzlow, and Grady 1998) and the Obesity and Neighborhood Environment (ONE) add-on (Harris and Udry 2008), a database that provides measures of the physical, social, and economic neighborhood environment, including indicators such as density and proximity to recreational facilities, land use patterning, population, economic, climate, and crime statistics, which are linked spatially and temporally to individual-level Add Health survey data. Aim 2 utilized data from the Waves I, II, III, and IV in-home interviews (n = 18,630 adolescents, after sample exclusions [distributed across 2,288 census tracts at Wave I]).

Measures and Analytic Strategies. Indicators of neighborhood class, racial/ethnic composition, and geography used in Aim 1 are listed in Table 1. All measures used in analyses for Aim 2 are listed in Table 2 (demographic controls and individual, family, and peer mediators). In Aim 1, the current study extends previous research (e.g., Aneshensel and Sucoff 1996; Sucoff and Upchurch 1998; Gorman-Smith, Tolan, and Henry 2000; Nelson, Gordon-Larsen, Song, and Popkin 2006) that relied exclusively on cluster analysis and observed means by identifying neighborhood types using a latent class analytic (LCA) method. As a model-based, probabilistic analytic strategy, latent class analysis provides:

$$P(\mathbf{Y} = \mathbf{y}|L = c) = \prod_{j=1}^{J} \prod_{r_j=1}^{R_j} \rho_{j,r_j|c}^{I(y_j=r_j)} \tag{Eq. 1}$$

where $P(\mathbf{Y} = \mathbf{y}|L = c)$ represents the probability of observing response pattern $\mathbf{y}$ (a vector of response alternatives r_j over each of the J variables), conditional on membership in latent class c. Because LCA is a model-based approach, it offers model selection tools such as the Akaike information criterion (AIC) and Bayesian information criterion (BIC) (Haughton, Legrand, and Woolford 2009:81) which can be used to compare competing models to balance model fit and parsimony (Collins and Lanza 2010). In Aim 2, analyses were estimated via a three-level model, with multiple observations over time (*t*, age in these analyses) nested within persons (*i*) who are nested within census tracts, *j* (following procedures used by Clarke and Wheaton 2005; Karriker-Jaffe, Foshee, Ennett, and Suchindran 2009). These growth curve models were estimated using HLM 6.0 (Raudenbush, Bryk, Cheong, and Congdon 2004), which allows for the specification of a negative binomial link function:

$$\eta_{tij} = \pi_{0ij} + \pi_{1ij}Age_{tij} \tag{Eq. 2}$$

where η_{tij} represents the log odds of the number of sex partners at age *t* for individual *i* in census tract *j*, π_{0ij} represents the initial log odds of number of partners age 12 for individual *i*, and π_{1ij} represents the average linear rate of change (the slope) in the initial log odds of number of partners for individual *i* in census tract *j* with each additional year of age *t*.

The level-2 (between-person) equation assesses the effect of neighborhood type, capturing differences between individuals within census tracts, and including measures of demographic characteristics, as well as theorized mediators. Dummy variables for the neighborhood types are entered at level-2 (not level-3) since persons (rather than census tracts) were used as the unit of analysis in the latent class analyses of their respective census tract characteristics—that is, the latent neighborhood types were developed based on the aggregation

of individual-level neighborhood characteristics:

$$\pi_{0ij} = \beta_{00j} + \boldsymbol{\beta_{01j}}\textbf{Neighborhood Types} + \boldsymbol{\beta_{02j}}\textbf{Demographics} + \quad \text{(Eq. 2.1a)}$$
$$\boldsymbol{\beta_{03j}}\textbf{IndChars} + \boldsymbol{\beta_{04j}}\textbf{FamilyChars} + \boldsymbol{\beta_{05j}}\textbf{PeerChars} + r_{0ij}$$

$$\pi_{1ij} = \beta_{10j} + \boldsymbol{\beta_{11j}}\textbf{Neighborhood Types} + \boldsymbol{\beta_{12j}}\textbf{Demographics} + \quad \text{(Eq. 2.1b)}$$
$$\boldsymbol{\beta_{13j}}\textbf{IndChars} + \boldsymbol{\beta_{14j}}\textbf{FamilyChars} + \boldsymbol{\beta_{15j}}\textbf{PeerChars} + r_{1ij}$$

Finally, the level-3 (between-tract) equation includes an intercept to adjust for shared

variance among respondents residing in the same census tracts:

$$\beta_{00j} = \gamma_{000} + u_{00j} \qquad\qquad \text{(Eq. 2.1.1a)}$$

$$\beta_{10j} = \gamma_{100} \qquad\qquad \text{(Eq. 2.1.1b)}$$

RESULTS (ABBREVIATED)

Aim 1. The first step in advancing a neighborhood-centered approach to studying contexts

of adolescent and young adult development is to develop a typology of neighborhoods based on

multidimensional, intersecting characteristics of neighborhood racial/ethnic composition,

socioeconomic class, and geography. The number of potential neighborhood types, while

unknown, is not infinite (where the maximum possible number of classes is one case per class),

and it is important to note the sizeable number of combinations possible across these 26

measures in a nationally representative dataset like Add Health. To ascertain the best solution for

capturing meaningful neighborhood types, I tested up to 9 class solutions on each of the analytic

subsets. In order to balance model fit and parsimony, my choice of model solution was guided by

fit statistics, model comparison tests, and an effort to ensure that each neighborhood type

contained at least 5% of respondents, to assure adequate statistical power for comparisons of

effects across neighborhood types. Based on these criteria, I chose a 10-class solution for the full

sample. Much like in factor analysis, developing labels for the neighborhood classes should be

guided by expectations grounded in theory, but also involves, to a degree, subjective decision-

making on the part of the researcher. I reviewed the distributional patterns of the 26 indicators across each of the identified neighborhood classes to construct meaningful labels for each class—these labels capture each of the three social cleavages: racial/ethnic composition, socioeconomic class, and geography.

Based on the distribution of indicators across neighborhood types, I labeled the 10 classes as follows: *Working Class White Rural*; *Middle Class White Suburban*; *Poor White Rural*; *Poor White Urban*; *Affluent White Suburban*; *Working Class Mixed Race Suburban*; *Poor Black Urban*; *Poor Black Rural*; *Poor Hispanic Urban*; and *Working Class Mixed Immigrant Urban*. Table 3 displays descriptive characteristics of each neighborhood type, and Table 4 lists the distribution of Add Health respondents across each type.

Aim 2. The long term impact of neighborhood type on the accumulation of sex partners during adolescence and young adulthood was next explored via a series of three-level hierarchical generalized linear growth curve models. Model 1 in Table 5 illustrates the unadjusted effect of adolescent neighborhood type on trajectories of sexual partners, again with *Middle Class White Suburban* as the reference category. Coefficients in the first column, under Initial Status, represent respondents' log of the expected count of sex partners at age 12 (because age was centered at 12). When exponentiated, these coefficients can be interpreted as the effect of a 1-unit change in X on the percent change in the expected count of Y. With respect to these initial differences, living in *Poor White Urban*, *Working Class Mixed Race Suburban*, *Poor Black Urban*, and *Poor Black Rural* neighborhoods is associated with reporting a higher number of sexual partners at age 12 compared to living in a *Middle Class White Suburban* neighborhood (living in *Working Class White Rural* and *Poor White Rural* is moderately associated with a higher initial number of partners [$p < 0.10$]). Compared to youth in *Middle Class White*

Suburban neighborhoods, youth living in a *Poor White Urban* neighborhood report 14.50% [(exp(0.1354)-1)*100] more sexual partners at age 12 than do their peers in *Middle Class White Suburbs*; youth in *Working Class Mixed Race Suburbs* report 13.45% more partners; youth in *Poor Black Urban* and *Poor Black Rural* report 29.30% and 29.69% more sex partners at age 12, respectively. While these coefficients capture differences across neighborhood types in initial number of sexual partners, change in number of partners with age is captured in the linear growth parameter, which represents the percent increase in the number of sex partners associated with a one year increase in age. Figure 1 illustrates the trajectory of sexual partners for youth in *Middle Class White Suburban* neighborhoods. What this figure illustrates, with respect to change in sexual partnering with age among youth in *Middle Class* and *Affluent White Suburbs*, is a steady increase in respondents' self-reported lifetime number of sexual partners, particularly after age 19. This increase in partners after age 19 likely corresponds with key life course transitions of emerging adulthood (particularly for youth from this type of neighborhood), such as graduating from high school, moving out of the parental home, and attending college (Arnett 2000).

Youth in all neighborhood types except *Affluent White Suburbs* and *Poor Black Urban* neighborhoods have trajectories of sexual partnering that significantly differ from peers in *Middle Class White Suburban* neighborhoods, and these trajectories are presented in Figure 2. This figure shows only slight variation across neighborhoods when adolescents are at younger ages (not surprising, given the lower prevalence of sexual activity at this young age), but this variation increases with age, as the spread of trajectories becomes wider, especially during the early 20s. A particularly interesting finding, as Model 1 (Table 5) shows, is that although there is no neighborhood type associated with a *lower* initial number of sexual partners than *Middle*

Class White Suburbs (youth in other neighborhood types were either higher or not significantly different), youth from most other neighborhoods experience a *slower* rate of change in sex partners—that is, compared to youth in *Middle Class White Suburbs*, youth in all other neighborhood types (except *Affluent White Suburban* and *Poor Black Urban*) accumulate sexual partners less quickly. For example, with each yearly increase in age, youth in *Poor White Rural* neighborhoods accumulate 1.11% fewer sexual partners than peers in *Middle Class White Suburbs*. Youth in *Poor Black Rural*, *Poor Hispanic Urban*, and *Working Class Mixed Immigrant Urban* accumulate 1.41%, 1.84%, and 2.96% fewer partners with each year, respectively. A particularly noteworthy finding is that youth growing up in *Middle Class White Suburban* neighborhoods accumulate sexual partners at the *same rate* as their peers who grew up in *Poor Black Urban* neighborhoods. Youth in more advantaged neighborhoods appear to engage in less risky sexual activity (as defined by number of partners) at any given age, but this is because they have an older mean age at sexual debut (discussed below); once sexually active, the rate at which they accumulate lifetime sex partners does not significantly differ from that of their disadvantaged peers.

Demographic characteristics associated with neighborhood accessibility and a flag for being sexually active at Wave I are added to Model 2. All demographic measures (and potential mediators) were tested for an effect on initial differences (intercept) and change with age (slope); for parsimony, measures were included on the slope only when they were significantly associated with the change in sexual partners with age; if a measure was not included on the slope, this means it did not affect—and therefore could not mediate—the age-graded trajectory of sexual partnering. Only gender and family SES are associated with the slope of sexual partnering. Females report 13.98% fewer sexual partners at age 12, and accumulate 0.95% fewer

partners with each yearly increase in age than males. Black and Native American youth report 14.94% and 19.66% more sexual partners at age 12, respectively, than White youth; Asian youth report 20.02% fewer partners, and Hispanic youth do not significantly differ. Youth living with two biological married parents report 16.31% fewer partners at age 12 than youth in all other family structures. Family socioeconomic status is negatively associated with initial number of sex partners, but positively associated with change in partnering with age—each one unit increase in family SES above the mean is associated with a 0.61% decrease in the number of partners reported at age 12; but each one unit increase above the mean is associated with a 0.17% increase in number of partners with each year increase in age. This is consistent with the pattern of change observed for youth from *Middle Class White Suburban* neighborhoods. Finally, not surprisingly, youth who were sexually active at the Wave I interview report 54.94% more partners at age 12 than Wave I virgins.

Even after including demographic characteristics, many of the differences in initial number of partners and change with age remain fairly unchanged, albeit reduced—two differences (*Poor White Urban* intercept and slope; *Poor Black Urban* intercept) are reduced to nonsignficance. The effect of *Poor White Urban* neighborhoods is reduced to nonsignificance with the inclusion of the variable *sexually active at Wave I*—that is, respondents in this neighborhood type report more partners because they initiate sexual activity earlier than peers in other neighborhood types (that is, they are more likely to have been sexually active at Wave I); thus, sexual debut fully mediates the effect of growing up in a *Poor White Urban* neighborhood. The effect of *Poor Black Urban* neighborhoods is reduced to nonsignificance with the inclusion of respondent race/ethnicity—given that Black youth report more sexual partners (because they experience sexual debut earlier) and are disproportionately concentrated in *Poor Black Urban*

neighborhoods, which have higher proportions of Black residents, relative to other neighborhood types, even *Poor Black Rural* neighborhoods.

Individual, family, and peer mediators are included simultaneously in a final model (Model 6, Table 6), as is the measure of years lived in the neighborhood, which is negatively associated with number of partners. The results in Table 6 show that neighborhoods do matter with respect to both initiating and modifying trajectories of sexual partnering over the early life course, above and beyond traditional demographic correlates of neighborhood accessibility and sexual activity, and key individual, family, and peer processes that are theorized to mediate neighborhood effects. This finding is similar to South and Baumer (2000) who found that academic aspirations and parental supervision did little to mediate the effect of neighborhood disadvantage on sexual activity; however, a large portion of the effect was explained by peer attitudes and behaviors, and more tolerant attitudes in distressed communities. Much of the research on neighborhood effects on youth sexual activity emphasizes the positive association between neighborhood disadvantage and sexual activity (e.g., Baumer and South 2001; Browning, Burrington, Leventhal, and Brooks-Gunn 2008); my results are consistent with this, in that youth from both *Poor Black Urban* and *Poor Black Rural,* but also *Poor White Urban* neighborhoods all report significantly more sex partners at age 12 than peers from *Middle Class White Suburbs*—this is largely because youth from these types of neighborhoods experience sexual debut earlier (they were all more likely to be sexually active at their Wave I interview), and thus have had more time in which to accumulate partners.

However, interestingly, although they report fewer sexual partners at age 12, youth growing up in *Middle Class White Suburban* neighborhoods accumulate sexual partners at the same rate as their peers who grew up in *Poor Black Urban* neighborhoods. This is also

interesting given Anderson's (1999) attention to the importance of sexual promiscuity (the "player" hypothesis) as a means of asserting masculinity among young Black males in the inner city. Further, this highlights that the overwhelming focus in existing neighborhood effects research on risky sexual activity in disadvantaged neighborhoods has resulted in a glaring omission of attention to the risky activity occurring among youth from middle class (and even affluent) White suburban neighborhoods. Despite the often observed association between neighborhood disadvantage and sexual activity, the current analysis shows that neighborhood poverty is not associated with sexual activity similarly across all types of neighborhoods—for instance, although youth from *Poor Black Urban, Poor Black Rural,* and *Poor White Urban* neighborhoods reported significantly higher initial numbers of sexual partners than their peers from *Middle Class White Suburbs,* youth from *Poor White Rural* and *Poor Hispanic Urban* neighborhoods did not significantly differ (or differed only slightly). Growing up in a *Working Class White Rural, Poor White Rural*, *Working Class Mixed Race Suburban*, *Poor Black Rural*, or *Working Class Mixed Immigrant Urban* neighborhoods initiated trajectories of sexual partnering for adolescents that were unaffected by demographic characteristics or individual, family, or peer mediators (Model 6). The dampened accumulation of partners for youths from these types of neighborhoods (relative to *Middle Class White Suburban* peers) is a key finding that has not yet been illustrated in existing research on neighborhoods and sexual activity.

CONCLUSION

This study introduced and advanced a "neighborhood-centered" approach to the study of adolescent behavior, bridging macrosociological life course and place stratification theories, along with the ecological research of the early Chicago School (particularly social disorganization theory). This is an important endeavor, given the relative influence of

neighborhoods for adolescent development. Because younger persons are often more geographically constrained than middle-aged and older persons (Reardon and Bischoff 2011), they therefore launch their adult life course trajectories within a structured set of opportunities and constraints (Shanahan 2000; Wheaton and Clarke 2003). In this study I have advocated for a critical reorientation of our ways of both thinking about and measuring neighborhood contexts. The analyses illustrate significant variation in trajectories of all three risk behaviors across neighborhood types (particularly non-White neighborhoods)—variation heretofore unobserved in neighborhoods research, and largely unexplained by individual, family, and peer characteristics. For instance, despite the dominant focus in neighborhood effects research on impoverished, predominantly Black, urban neighborhoods, youth from *Poor Black Urban* neighborhoods, as well as those from *Poor Black Rural* neighborhoods were only higher than *Middle Class White Suburban* youth on lifetime number of sexual partners.

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Table 1. Descriptive Characteristics for Indicators of Neighborhood Type

	Mean	SD	Range
(1) Neighborhood Class			
Low SES			
Population in poverty	0.15	0.12	0.00-0.86
Proportion female-headed households	0.20	0.15	0.00-0.96
Proportion families earning < $15,000	0.19	0.14	0.00-0.90
Proportion households receiving public assistance	0.09	0.08	0.00-0.67
Proportion males age 25 and older unemployed	0.08	0.05	0.00-0.94
Proportion residents employed in blue collar occupations	0.30	0.11	0.00-0.64
Proportion residents age 25 and older with < high school education	0.29	0.14	0.00-0.87
High SES			
Median household income	30,758.67	13,308.22	4,999-125,053
Proportion residents age 25 and older with > high school education	0.23	0.13	0.00-0.90
Proportion residents age 25 and older employed in managerial/professional occupations	0.22	0.10	0.00-0.75
Proportion families earning > $50,000	0.27	0.17	0.00-0.92
Proportion owner occupied housing units	0.66	0.20	0.00-0.98
(2) Racial/Ethnic Composition			
Racial Composition			
Proportion residents non-Hispanic white	0.66	0.33	0.00-1.00
Proportion residents non-Hispanic black	0.17	0.27	0.00-1.00
Proportion residents non-Hispanic other race	0.06	0.12	0.00.00-0.78
Ethnic Diversity/Immigrant Presence			
Proportion residents Hispanic	0.12	0.20	0.00-0.96
Proportion residents foreign born	0.11	0.16	0.00-0.87
(3) Geography: Urbanicity/Suburbanicity/Rurality			
Population density	1.86	3.55	0.00-69.17
Population rural	0.26	0.39	0.00-1.00
South	0.37	0.48	0.00-1.00
Proportion residents employed in farming occupations	0.02	0.04	0.00-0.37
Median house age	25.42	12.14	0.00-50.00
Cul-de-sac density	4.67	3.66	0.0-24.79
Cyclomatic index	424.09	392.28	2.00-2947.00
Intersection density	23.55	18.47	0.00-121.45
Rural Urban Commuting Area (see Table 2)			

Sources: National Longitudinal Survey of Adolescent Health Wave I Contextual Database; Obesity and Neighborhood Environment (ONE) Database (n = 20,549)

Table 2. Measures of Individual, Peer, and Family Mediators and Demographics

Construct	Indicators and Response Options
Outcome	
Risky sexual activity	Lifetime number of sexual partners
Demographics	
Gender	Dummy variable for female (0/1)
Race/Ethnicity	Dummy variables for (a) non-Hispanic white, (b) black, (c) Hispanic, (d) Asian, and (e) American Indian /Other races (0/1)
Family structure	Dummy variables; whether R resides with (a) biological parents, (b) any other two parents, (c) a single mother, (d) a single father, or (e) in some other family type (1 = yes, 0 = no)
Family socioeconomic status	Combined scale of parent's education and parent's occupational level (0 – 10)
Immigrant status	R not born in the United States (1 = yes, 0 = no)
Mediators	
Individual Characteristics	
Relative pubertal development	"How advanced is your physical development compared to other boys [girls] your age?" (1 = "I look younger than most," to 5 = "I look older than most")
Low self-control	(a) "Trouble keeping your mind on what you were doing;" (b) "Trouble getting your homework done;" (c) "Difficulty paying attention in school;" (d) "[Feel] like you are doing everything just about right" (0 = never or rarely to 3 = most or all of the time)
Academic aspirations	"On a scale of 1 to 5, how likely is it that you will go to college?" (1 = low to 5 = high)
Attachment to school	(a) feel close to people at school, (b) feel like a part of their school, and (c) are happy to be at their school (1 = strongly disagree to 5 = strongly agree)
Peer Characteristics	
Friend marijuana smoking	"Of your three best friends, how many use marijuana at least once a month?" (0 = none to 3 = three)
Unstructured socializing	"During the past week, how many times did you just hang out with friends" (0 = not at all to 3 = 5 or more times)
Family Characteristics	
Family support	Extent to which R feels family (a) understands them, (b) pays attention to them, and (c) they have fun together (1 = not at all to 5 = very much)
Parental attachment	(a) "How close do you feel to your mother (biological mother/adoptive mother/stepmother, etc.) [father (biological father/adoptive father/stepfather, etc.)]," (b) "How much do you feel that your mother [father] cares about you?" (1 = not at all to 5 = very much)
Other Demographic Controls	
Years in neighborhood	Calculated from R's age when first moved to current residence

Source: National Longitudinal Survey of Adolescent Health Wave I

Table 3. Select Descriptive Characteristics of Neighborhood Types, Medians and Ranges

| Neighborhood Type[a] | *Racial/Ethnic Composition* | | | | | *Socioeconomic Status* | | *Geography* | |
	% NH White	% NH Black	% Hispanic	% Other	% Foreign Born	% Poverty	Median Income (1000s)	Population Density	% Population Rural
MC White Suburban	93.29	1.49	2.11	1.25	3.86	4.39	36.98	0.90	0.00
	80.32-100.00	0.00-18.03	0.00-16.32	0.00-11.41	0.14-33.14	0.00-26.48	15.58-56.18	0.00-27.05	0.00-2.00
WC White Rural	97.74	0.14	0.89	0.60	2.19	7.42	33.26	0.15	1.00
	80.25-100.00	0.00-17.51	0.00-18.80	0.00-6.80	0.00-7.76	0.00-20.23	19.87-56.18	0.00-1.28	0.00-2.00
Poor White Rural	98.33	0.27	0.35	0.49	0.60	15.75	22.18	0.01	2.00
	80.23-100.00	0.00-18.54	0.00-19.26	0.00-3.83	0.00-6.45	5.77-53.94	9.90-31.36	0.00-0.91	0.00-2.00
Poor White Urban	95.03	1.27	1.83	1.17	1.94	11.44	23.79	1.33	0.00
	80.18-100.00	0.00-18.36	0.00-18.18	0.00-9.59	0.00-40.07	2.27-61.91	6.84-36.48	0.01-22.76	0.00-2.00
Affluent White Suburban	90.92	1.80	0.77	1.89	3.12	2.51	57.59	0.69	0.00
	80.12-99.74	0.00-15.58	0.00-10.67	0.00-16.23	0.15-29.37	0.39-8.16	37.89-125.05	0.01-28.49	0.00-2.00
WC Mixed Race Suburban	61.58	12.92	10.20	4.99	10.50	7.54	35.58	2.17	0.00
	0.00-79.71	0.00-100.00	0.00-89.29	0.00-78.38	0.00-72.43	0.00-41.46	12.39-77.17	0.00-37.66	0.00-2.00
Poor Black Urban	10.36	84.93	0.84	0.69	1.59	32.33	16.65	2.15	0.00
	0.00-79.45	2.93-100.00	0.00-80.67	0.00-27.71	0.00-57.55	8.25-86.36	4.99-35.32	0.02-69.17	0.00-2.00
Poor Black Rural	53.16	35.91	0.56	0.72	0.72	27.09	17.75	0.03	1.00
	0.92-79.48	0.00-97.99	0.00-34.95	0.00-37.24	0.00-20.50	8.54-51.08	10.18-32.53	0.00-2.45	0.00-2.00
Poor Hispanic Urban	17.57	1.83	69.20	1.09	35.64	24.70	20.81	3.99	0.00
	0.00-77.64	0.00-80.56	3.72-96.27	0.00-78.14	4.23-86.90	5.08-55.75	9.12-36.48	0.04-61.45	0.00-2.00
WC Mixed Immigrant Urban	30.93	4.99	30.02	32.94	34.79	7.10	41.40	2.75	0.00
	8.50-70.48	0.00-24.08	13.75-75.05	0.94-58.76	13.64-52.95	2.69-26.70	23.02-62.56	0.49-6.19	0.00-0.00

Note:

[a] WC = Working Class; MC = Middle Class

Source: National Longitudinal Study of Adolescent Health Wave I (n=20,549)

Table 4. Distribution of Respondents and Census Tracts Across Neighborhood Types
(Unweighted Percentages)

	# of respondents	% of respondents	# of tracts	% of tracts
Neighborhood Type				
Middle Class White Suburban	2737	13.32	389	15.17
Working Class White Rural	3083	15.00	195	7.60
Poor White Rural	1829	8.90	138	5.38
Poor White Urban	1738	8.46	242	9.43
Affluent White Suburban	974	4.74	138	5.38
Working Class Mixed Race Suburban	2986	14.53	517	20.16
Poor Black Urban	1988	9.67	450	17.54
Poor Black Rural	1902	9.26	106	4.13
Poor Hispanic Urban	1670	8.13	311	12.12
Working Class Mixed Immigrant Urban	1642	7.99	79	3.08
Total	20,549	100.00%	2,565	100.00%

Source: National Longitudinal Study of Adolescent Health Wave I (n=20,549)

Table 5. Effect of Neighborhood Type on Trajectories of Adolescent and Young Adult Number of Sexual Partners, Ages 12-30, Negative Binomial Regression Coefficients from Hierarchical Generalized Linear Growth Models

	Model 1		Model 2	
	Initial Status	Linear Growth	Initial Status	Linear Growth
Intercept	0.5780***	0.1003***	0.5556***	0.1055***
Neighborhood Type				
Middle class White Suburban (reference)	—	—	—	—
Working Class White Rural	0.0853†	-0.0103**	0.0809†	-0.0089*
Poor White Rural	0.1112†	-0.0112**	0.0926†	-0.0084*
Poor White Urban	0.1354*	-0.0091*	0.0475	-0.0056
Affluent White Suburban	0.0130	-0.0046	0.0849	-0.0065
Working Class Mixed Race Suburban	0.1262*	-0.0091*	0.0774	-0.0074†
Poor Black Urban	0.2570***	-0.0059	0.0164	-0.0024
Poor Black Rural	0.2600***	-0.0142**	0.1096*	-0.0117**
Poor Hispanic Urban	-0.0396	-0.0186**	-0.0545	-0.0122*
Working Class Mixed Immigrant Urban	0.1059	-0.0303***	0.1232†	-0.0258***
Demographics				
Female [a]			-0.1506***	-0.0092***
Black [b]			0.1395***	
Hispanic [b]			-0.0177	
Asian [b]			-0.2234***	
American Indian/Other [b]			0.1795**	
Immigrant			-0.1382***	
Two biological married parents [c]			-0.1780***	
Family SES [d]			-0.0061	0.0017***
Sexually active at Wave I			0.4379***	
Variance components				
Level-1	2.01019		1.95999	
Level-2 (χ^2)	0.47119	(76025.31)***	0.40605	(66560.08)***
Level-3 (χ^2)	0.01875	(2615.30)***	0.02269	(2485.35)***
-2 Log Likelihood	148958.78		146654.40	

Notes: [a] Male serves as the reference; [b] Non-Hispanic White serves as the reference; [c] All other family types serves as the reference; [d] Indicates variable is centered around its grand mean.
Source: National Longitudinal Study of Adolescent Health Waves I-IV (n = 36,034 observations; 16,408 respondents)
† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests)

Figure 1. Trajectories of Lifetime Number of Sex Partners, Unadjusted Predicted Counts
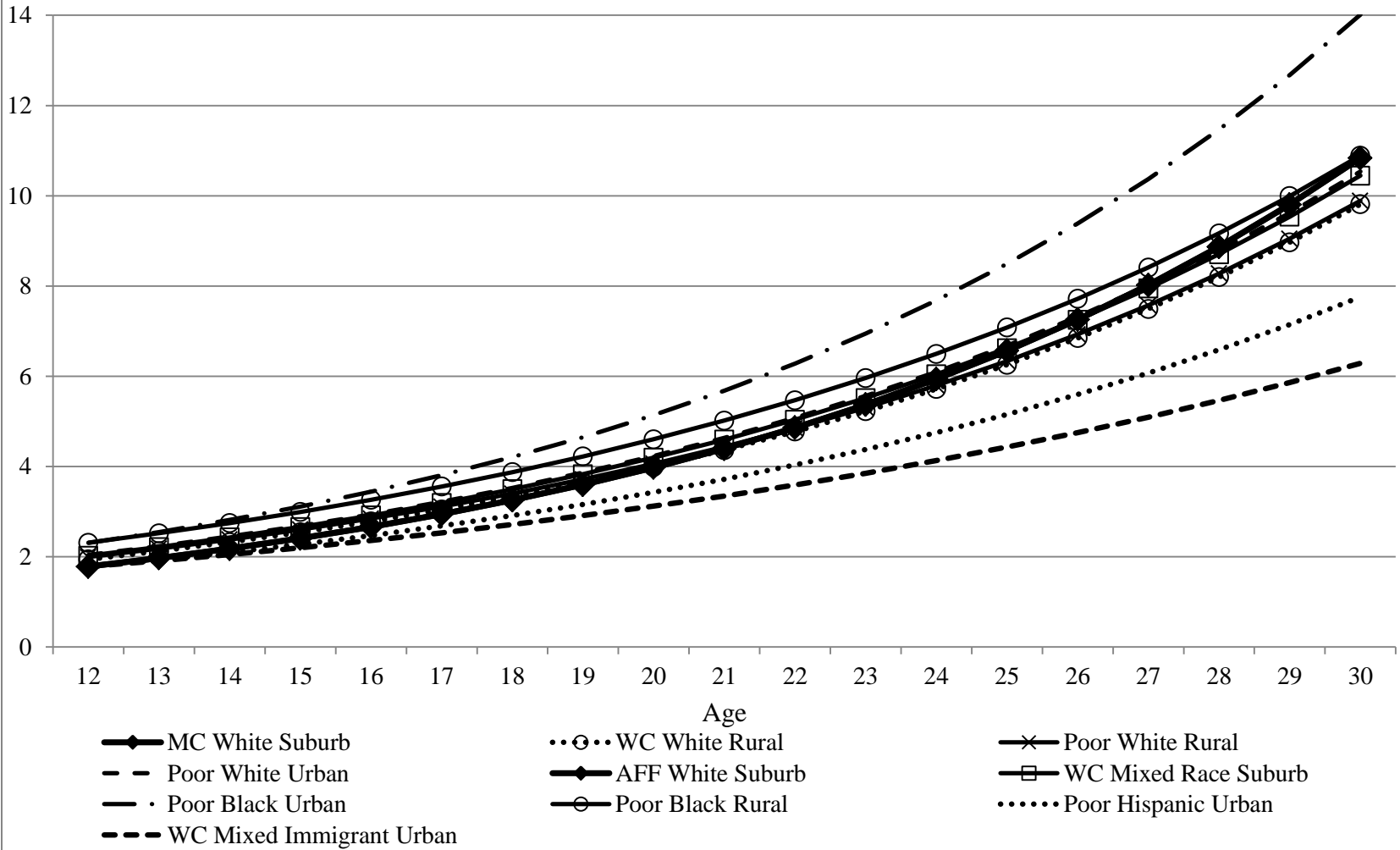
Notes: Estimates based on coefficients from Model 1 (Table 5); Intercepts and slopes not significantly different from reference group are constrained to the same values as reference group; MC = middle class, WC = working class, AFF = affluent

Table 6. Full Model Assessing the Role of **Individual, Family,** and **Peer Characteristics** in Explaining the Effect of Neighborhood Type on Trajectories of Adolescent and Young Adult Number of Sexual Partners, Ages 12-30, Negative Binomial Regression Coefficients from Hierarchical Generalized Linear Growth Models

	Model 2		Model 6	
	Initial Status	Linear Growth	Initial Status	Linear Growth
Intercept	0.5556***	0.1055***	0.4421***	0.1068***
Neighborhood Type				
Middle class White Suburban (reference)	—	—	—	—
Working Class White Rural	0.0809†	-0.0089*	0.0874*	-0.0086*
Poor White Rural	0.0926†	-0.0084*	0.1099*	-0.0086*
Poor White Urban	0.0475	-0.0056	0.0294	-0.0044
Affluent White Suburban	0.0849	-0.0065	0.0872	-0.0064
Working Class Mixed Race Suburban	0.0774	-0.0074†	0.0894†	-0.0077†
Poor Black Urban	0.0164	-0.0024	0.0426	-0.0028
Poor Black Rural	0.1096*	-0.0117**	0.1639**	-0.0127**
Poor Hispanic Urban	-0.0545	-0.0122*	-0.0262	-0.0121*
Working Class Mixed Immigrant Urban	0.1232†	-0.0258***	0.1309*	-0.0253***
Demographics				
Female [a]	-0.1506***	-0.0092***	-0.1361***	-0.0095**
Black [b]	0.1395***		0.1797***	
Hispanic [b]	-0.0177		-0.0063	
Asian [b]	-0.2234***		-0.2085***	
American Indian/Other [b]	0.1795**		0.1698**	
Immigrant	-0.1382***		-0.1240***	
Two biological married parents [c]	-0.1780***		-0.1402***	
Family SES [d]	-0.0061	0.0017***	0.0002	0.0012**
Sexually active at Wave I	0.4379***		0.3721***	
Years in the neighborhood [d]			-0.0230***	
Mediators				
Individual Characteristics				
Academic aspirations [d]			-0.0329**	0.0025**
Attachment to school [d]			-0.0550***	0.0035**
Relative pubertal development			0.0532***	
Low self control [d]			0.1280***	
Family Characteristics				
Parental attachment [d]			0.0003	
Family support [d]			-0.0529***	
Peer Characteristics				
Unstructured socializing [e]			0.1276***	
Variance components				
Level-1	1.95999		1.94691	
Level-2 (χ^2)	0.40605	(66560.08)***	0.38929	(63725.50)***
Level-3 (χ^2)	0.02269	(2485.35)***	0.02183	(2472.81)***

| *-2 Log Likelihood* | 146654.40 | 146009.42 |

Figure 2. Trajectories of Lifetime Number of Sex Partners (All Respondents), Unadjusted Predicted Counts

Notes: Estimates based on coefficients from Model 1 (Table .6); Intercepts and slopes not significantly different from reference group are constrained to the same values as reference group; MC = middle class, WC = working class, AFF = affluent